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TIME DEGRADATION FACTORS FOR TURBINE ENGINE EXHAUST EMISSIONS. --ETC(U)

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# TIME DEGRADATION FACTORS FOR TURBINE ENGINE EXHAUST EMISSIONS

VOLUME VII  
RB211-22B TEST DATA



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INTERIM REPORT

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17. Abstract This is the seventh volume of an eight-volume report concerning the degradation of turbine engine emissions. This volume contains a compilation of all emission test data and analysis data used in the development of degradation factors for the RB211-22B engine type. In addition, the volume contains maintenance data for the test units during the period of testing, as well as analyses of the samples of fuel used in each test.					
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## 1. INTRODUCTION

This is the seventh volume of an eight-volume report concerning the degradation of turbine engine emissions. This volume contains test data obtained for the RB211-22B engine type as installed on the L1011 aircraft. The engines, owned and operated by TWA, were tested in San Francisco by NREC personnel.

The other volumes of the report are listed below:

- Volume I - Program Description and Results
- Volume II - JT8D-9 Test Data
- Volume III - JT8D-7 Test Data
- Volume IV - JT3D-7 Test Data
- Volume V - JT3D-3B Test Data
- Volume VI - JT9D-3A Test Data
- Volume VIII - CF700-2D Test Data

Regarding the test data, it should be noted that EPA test specifications were not followed where they conflicted with the interests of degradation testing. Hence, comparison of absolute emission levels presented in this report with EPA standards may be misleading.

### 1.1 CONTENT OF VOLUME

There are four sections that make up the volume: Engine Test and Maintenance Chronology; Nomenclature; Emissions and Analysis Data; and Fuel Analysis Data.

The Engine Test and Maintenance Chronology section contains a chronological, unit-by-unit, listing of noteworthy events occurring to a particular engine in the course of the program. This includes test dates, dates and descriptions of maintenance, and the dates of installations onto other aircraft that may have occurred. If an engine was removed from the program, the date and reason are also included.

The Nomenclature section contains a listing and description of all the titles and column headings used in the two succeeding sections. This includes all equations used in the various calculations.

The Emission and Analysis Data section includes all data gathered during a test, plus the results of any calculations performed on that data.



It consists of a number of tables arranged according to test series. For the RB211-22B engine there were five such series; Baseline; 150 Hour; 300 Hour; 450 Hour; and 600 Hour and Above. The hour designations represent the nominal value of time since baseline (TSB) for each engine tested. The actual values of TSB are scattered about the nominal values. Within each test series, the data is further subdivided into a table of data pertinent to an entire test for an engine and a series of seven tables for each of the eight modes tested. Thus there are a total of 57 tables for each test series. In addition, the section begins with a set of notes documenting the data.

The Fuel Analysis Data section contains a unit-by-unit listing of the results of analyses performed on samples of jet fuel used during the emission tests. During each engine test, a sample of fuel was taken from the same fuel tank as used during the test and subsequently analyzed. The results of the analyses include API gravity, hydrogen-carbon ratio and the percentages of paraffins, olefins and aromatics.

## 2. ENGINE TEST AND MAINTENANCE CHRONOLOGY

Unit No./ Serial No.	Date	Item
1/4802	6/1/76	Original Test A/C No. <u>11020</u> , Position No. <u>1</u> Baseline Emission Test
	6/28/76	"150-Hour" Emission Test
	7/27/76	"300-Hour" Emission Test
	8/23/76	"600-Hour" Emission Test
2/4425	6/1/76	Original Test A/C No. <u>11020</u> , Position No. <u>3</u> Baseline Emission Test
	6/18/76	The following took place after numerous squaks pertaining to high oil temperature in the engine. On start of take-off roll engine had what sounded like a compressor stall. We closed the throttle and the engine got to 750 deg before shutdown. The engine was removed from the program.
3/4487	6/3/76	Original Test A/C No. <u>11027</u> , Position No. <u>1</u> Baseline Emission Test
	6/13/76	Disc: Engine TGT was normal for first 2 1/2 hours then became erratic C/A: Replaced TGT indicator
	6/14/76	Disc: Same squak as above C/A: Cleaned TGT indicator connectors
	6/16/76	Disc: Same squak as above C/A: Replaced indicator
	6/18/76	C/A: Screws too long in panel on top of engine splitter are causing to wear on TGT leads, replaced screws.
	6/21/76	"150-Hour" Emission Test
	7/25/76	"300-Hour" Emission Test
	8/7/76	"450-Hour" Emission Test
	9/2/76	"600-Hour" Emission Test
	9/11/76	Disc: Checked engine for puddling after flight termination C/A: Replaced engine per M139-585, engine removed from program

Unit No./ Serial No.	Date	Item
4/4454		Original Test A/C No. <u>11027</u> , Position No. <u>3</u>
	6/3/76	Baseline Emission Test
	6/21/76	"150-Hour" Emission Test
	7/25/76	"300-Hour" Emission Test
	8/7/76	"450-Hour" Emission Test
	9/2/76	"600-Hour" Emission Test
	9/15/76	Disc: After take-off oil psi started dropping, then oil quantity dropped to zero. After T.O. AH synthetic oil smell was apparent 5 minutes before oil loss. Isolated duct and stopped smell. Shut down engine at 12452 - idled engine 1 min approx 20 psi. Engine windmilled 26 mins, zero quantity and 20 mins zero set  C/A: Found main oil screen clogged. Replaced screen, completed M139-59A and performed test no. 9 (oil consumption) no oil consumed, also changed oil
5/4468	10/8/76	"750-Hour" Emission Test
		Original Test A/C No. <u>11002</u> , Position No. <u>1</u>
	6/11/76	Baseline Emission Test
6/4429	7/12/76	Engine removed from program
		Original Test A/C No. <u>11002</u> , Position No. <u>3</u>
	6/11/76	Baseline Emission Test
7/4470	7/20/76	Engine removed from program
		Original Test A/C No. <u>11019</u> , Position No. <u>1</u>
	6/14/76	Baseline Emission Test
	6/21/76	Disc: On engine start oil pressure lite came on as engine was started  C/A: Changed main oil and scan screen
	7/11/76	"150-Hour" Emission Test
	8/6/76	"450-Hour" Emission Test
	8/31/76	"600-Hour" Emission Test

Unit No./ Serial No.	Date	Item
8/4814		Original Test A/C No. <u>11019</u> , Position No. <u>3</u>
	6/15/76	Baseline Emission Test
	7/2/76	Disc: Engine EPR reads low with all other parameters aligned
		C/A: Replaced EPR indicator
	7/11/76	"150-Hour" Emission Test
9/4457	7/30/76	All engine parameters low, with fuel control amp switch set to override, all engine parameters indicate power restored, engine removed from program, per M139-585.
		Original Test A/C No. <u>11031</u> , Position No. <u>1</u>
	6/15/76	Baseline Emission Test
10/4898	6/28/76	Engine removed from program
		Original Test A/C No. <u>11031</u> , Position No. <u>3</u>
	6/15/76	Baseline Emission Test
	6/26/76	Disc: Engine oil filter pressure lite on/off during take-off and early climb out. Temperature and quantity Ok.
		C/A: Replaced pressure and scavenger filters
	8/11/76	Disc: Parameter indicator readings fluctuating with fuel control amp switch set to override. Fluctuation did not drop.
		C/A: Replaced fuel flow regulator, same squak on JFK leg of flight. No maint action requested as per TWA directive MSL 7-99-C73 but MCI engineering department advised
	8/19/76	Disc: Engine oil filter lite on in climb out of LAX; went out in cruise
		C/A: Replaced main and scavenger oil filters
	8/19/76	"600-Hour" Emission Test
	8/21/76	Disc: Engine EPR indication loss
		C/A: Replaced EPR indicator
	8/29/76	Disc: Engine very slow to start
		C/A: Replaced both ignition plugs



Unit No./ Serial No.	Date	Item
10/4898 Continued	9/16/76	Disc: Engine slow to light-off after ignition on  C/A: Washed APU and changed P-3 filter and checked, OK for proper trim
	9/24/76	Disc: Engine reverser intransit lite on during flight  C/A: Proximity sensor gap adjusted, same squak on next leg, corrected by switch adjustment
	10/7/76	"750-Hour" Emission Test
11/4489		Original Test A/C No. <u>11009</u> , Position No. <u>1</u>
	6/22/76	Baseline Emission Test
	7/4/76	On descent to JFK engine would not accelerate. Used handbook procedure, operation normal but the during taxi in - same thing.  C/A: Changed FFR
	7/17/76	Disc: On take-off with throttle against stop, unable to obtain take-off power. Take-off power should be 1.538  C/A: Replaced P <sub>4</sub> filter assembly
	7/19/76	Same squak, uptrimmed 2 turns
	7/27/76	Same squak again, replaced amplifier and reads TGT
	8/2/76	"300-Hour" Emission Test
	8/10/76	Out of JFT at full no reduction thrust take-off no. 1 engine 0.03 EPR low at full throttle. All other instruments low. Normal power at all other settings.  C/A: Uptrimmed at San Francisco
	8/11/76	Same complaint again, retrimmed again
	8/12/76	Similar complaint as above, replaced fuel flow regulator
	8/24/76	"450-Hour" Emission Test
	9/15/76	"600-Hour" Emission Test



Unit No./ Serial No.	Date	Item
12/4816		Original Test A/C No. <u>11009</u> , Position No. <u>3</u>
	6/22/76	Baseline Emission Test
	8/2/76	"300-Hour" Emission Test
	8/24/76	"450-Hour" Emission Test
	8/28/76	Engine generator bearing lite on, all other indications normal
		C/A: Replaced generator control unit
	9/1/76	Same squak again, replaced generator bearing unit again
	9/14/76	No ignition on engine during start until "Cont" ignition pushed, all other indications normal
13/4495		C/A: Replaced "A" excitor unit and engine start normal
	9/15/76	"600-Hour" Emission Test
		Original Test A/C No. <u>11012</u> , Position No. <u>1</u>
	7/3/76	Baseline Emission Test
	7/5/76	Disc: EPR inoperative
		C/A: Replaced EPR transmitter
	7/6/76	Disc: N <sub>1</sub> and N <sub>3</sub> maximum indicator lites on and would not reset
		C/A: Replaced N <sub>1</sub> indicator, placard N <sub>3</sub> indicator
	7/7/76	Replaced N <sub>3</sub> indicator and removed placard
	7/11/76	Disc: N <sub>3</sub> indicator fluctuates
		C/A: Replaced N <sub>3</sub> indicator module, reset CB
	7/20/76	"150-Hour" Emission Test
	8/11/76	"300-Hour" Emission Test
	8/29/76	"450-Hour" Emission Test
14/4804	8/29/76	Disc: ISLN valve would not open after engine start. No air flow or flowbar. Pulling CB no help.
		C/A: Replaced ISLN valve
	9/23/76	"600-Hour" Emission Test
		Original Test A/C No. <u>11012</u> , Position No. <u>3</u>
	7/3/76	Baseline Emission Test

Unit No./ Serial No.	Date	Item
14/4804 Continued	7/13/76	Disc: Engine would not develop take-off thrust, reduced EPR was 0.502 and 0.480 was obtained with throttle on the stop. All other parameters also low. Engine operation in climb and cruise appears normal except throttle is 3/4 to 1 knob ahead of others. Take-off temperature 83 deg F alt 29.31  C/A: Replaced engine lower tongue box and teleflex cable
	7/20/76	"150-Hour" Emission Test
	7/31/76	Disc: Engine oil found draining down from rear turbine  C/A: Replaced scavenge filter
	8/6/76	Changed N <sub>3</sub> indicator and TGT indicator
	8/11/76	"300-Hour" Emission Test
	8/29/76	"450-Hour" Emission Test
	9/11/76	Engine AVM reads off scale in turbine position  C/A: Changed vibration monitor
	9/12/76	Disc: Same squak as above  C/A: Found AVM pickup mount bracket loose, secured same
	9/18/76	Above condition persisted thru 9/18/76 - engine placarded during this period and then a harness change was made and placard removed
	9/21/76	Engine AVM squak appeared again and the turbine AVM pickup was replaced
	9/23/76	Same squak again, replaced signal conditioner unit
	9/23/76	"600-Hour" Emission Test
	15/4435	Original Test A/C No. <u>11004</u> , Position No. <u>3</u>
	7/9/76	Baseline Emission Test
	7/23/76	"150-Hour" Emission Test
16/4474		Original Test A/C No. <u>11008</u> , Position No. <u>1</u>
	7/30/76	Baseline Emission Test

Unit No./ Serial No.	Date	Item
16/4474 Continued	8/25/76	"150-Hour" Emission Test
	9/4/76	ACM growls loudly, changed ACM on 9/6/76
	10/5/76	"450-Hour" Emission Test
17/4403		Original Test A/C No. <u>11008</u> , Position No. <u>3</u>
	7/30/76	Baseline Emission Test
	8/25/76	"150-Hour" Emission Test
	9/13/76	Replaced fuel quantity indicator
	9/23/76	Engine experienced a series of compressor stalls on descent. Changed engine and removed from program.
18/4801		Original Test A/C No. <u>11015</u> , Position No. <u>1</u>
	8/9/76	Baseline Emission Test
19/4479		Original Test A/C No. <u>11015</u> , Position No. <u>3</u>
	8/9/76	Baseline Emission Test
	8/30/76	Engine removed from program

### 3. NOMENCLATURE

Name	Symbol	Description	Unit
TSO	TSO	Time Since Overhaul	hrs
TSB	TSB	Time Since Baseline	hrs
AMB TEMP	$T_a$	Ambient temperature	deg R
AMB PRESS	$P_a$	Barometric pressure	in Hg abs
AMB HUMID	H	Ambient humidity	lbm H2O per lbm dry air
MODE 1		Idle, initial - 23 per cent $N_1$ nominal	
MODE 2		Idle "plus", initial - 27 per cent $N_1$	
MODE 3		Take-off - T.O. EPR from airline engine operating guide	
MODE 4		Climb - EPR corresponding to 85 per cent T.O. thrust	
MODE 5		Intermediate - EPR corresponding to 60 per cent T.O. thrust	
MODE 6		Approach - EPR corresponding to 30 per cent T.O. thrust	
MODE 7		Idle "plus", final - see MODE 2	
MODE 8		Idle, final - see MODE 1	
N1 SPEED	$N_1$	Rotational speed of low pressure turbine, given as a percent of design speed (3900 rpm)	percent
N2 SPEED	$N_2$	Rotational speed of intermediate pressure turbine, given as a percent of design speed (7000 rpm)	percent
N3 SPEED	$N_3$	Rotational speed of high pressure turbine, given as a percent of design speed (10,600 rpm)	percent
CORR N1	$N_1'$	$N_1$ speed corrected to standard ambient conditions (Ref 1) $N_1' = N_1 \times \sqrt{518.7/T_a}$	percent

Name	Symbol	Description	Unit
CORR N2	$N_2'$	Corrected $N_2$ speed (Ref 1) $N_2' = N_2 \times \sqrt{518.7/T_a}$	percent
CORR N3	$N_3'$	Corrected $N_3$ speed (Ref 1) $N_3' = N_3 \times \sqrt{518.7/T_a}$	percent
FUEL FLOW	F	Fuel Flow	lbm per hr
CB F/A	$(F/A)_{CB}$	Carbon balance fuel-air ratio (Ref 2, dry basis) $(F/A)_{CB} = \frac{(12+a) \times 4.77(1+0.25a)}{(1+0.25a)(32+3.73 \times 28 + 0.04 \times 40)} \div$ $\left[ \frac{100}{\frac{CO+CO_2+HC}{10^4} \times 2 \frac{HC}{10^4}} + 0.25a - \frac{1}{2} \left( \frac{CO/10^4}{\frac{CO+CO_2+HC}{10^4} \times 2 \frac{HC}{10^4}} \right) - \frac{(1+0.25a) HC/10^4}{\frac{CO+CO_2+HC}{10^4} \times 2 \frac{HC}{10^4}} \right]$ where a is the hydrogen-carbon ratio of the fuel as obtained in the fuel analysis (a mean value was used when the analysis was not available; $a_{mean} = 1.90$ )	
PERF F/A	$(F/A)_{PF}$	Performance fuel-air ratio where air flow is obtained from curve shown in Figure 1 and fuel flow is measured	
TT7	$T_{T7}$	Exhaust gas temperature	deg R
EPR	EPR	Engine pressure ratio	
THRUST	TH	Thrust, obtained from $TH = TH' \times (P_a/29.92)$ (Ref 1)	lbf
CORR FU FL	$F'$	Corrected fuel flow (Ref 1) $F' = F \times (29.92/P_a) \times \sqrt{518.7/T_a}$	lbm per hr
COR CB F/A	$(F/A)'_{CB}$	Corrected carbon balance fuel-air ratio (Ref 1) $(F/A)'_{CB} = (F/A)_{CB} \times (518.7/T_a)$	
COR PF F/A	$(F/A)'_{PF}$	Corrected performance fuel-air ratio (Ref 1) $(F/A)'_{PF} = (F/A)_{PF} \times (518.7/T_a)$	



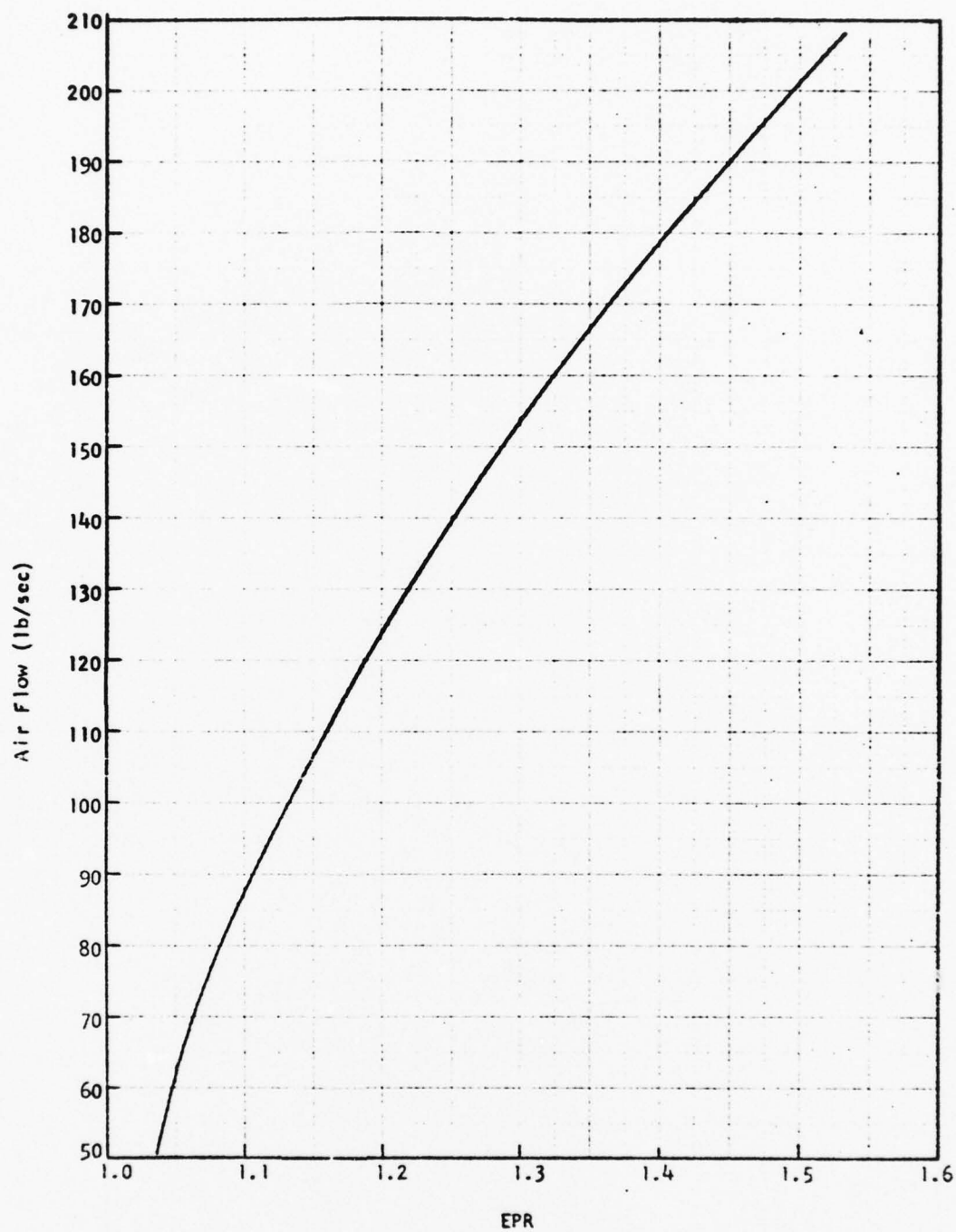


Figure 1. Estimated Total Air Flow versus EPR

Name	Symbol	Description	Unit
CORR TT7	$T_{T7}'$	Corrected exhaust gas temperature $T_{T7}' = T_{T7} \times (518.7/T_a)$	deg R
COR THRUST	$TH'$	Corrected thrust (obtained from curve shown in Fig 2 for modes 3 through 6 and from the curve shown in Fig 3 for modes 1, 2, 7 and 8)	lbf
CO2 CONC	$CO_2$	Concentration of carbon dioxide	percent
CO CONC	CO	Concentration of carbon monoxide	ppm
HC CONC	HC	Concentration of hydrocarbons (propane)	ppm
NO CONC	NO	Concentration of NO	ppm
NOX CONC	$NO_x$	Concentration of $NO_x$	ppm
CO2 EI	$EI_{CO_2}$	Emission index of carbon dioxide (Ref 3) $EI_{CO_2} = \frac{M_{CO_2} \times CO_2 \times 1000}{(M_C + a \times M_H) \left( \frac{CO}{10^4} + \frac{CO_2 + HC}{10^4} \right)}$ where: $M_C$ = atomic weight of carbon $M_H$ = atomic weight of hydrogen $M_{CO_2}$ = molecular weight of $CO_2$	lbm per 1000 lbm fuel
CO EI	$EI_{CO}$	Emission index of carbon monoxide (Ref 3) $EI_{CO} = \frac{M_{CO} \times \frac{CO}{10^4} \times 1000}{(M_C + a \times M_H) \left( \frac{CO}{10^4} + \frac{CO_2 + HC}{10^4} \right)}$ where: $M_{CO}$ = molecular weight of CO	lbm per 1000 lbm fuel
HC EI	$EI_{HC}$	Emission index of hydrocarbons (Ref 3) $EI_{HC} = \frac{M_{HC} \times \frac{HC}{10^4} \times 1000}{(M_C + a \times M_H) \left( \frac{CO}{10^4} + \frac{CO_2 + HC}{10^4} \right)}$ where: $M_{HC}$ = molecular weight of methane	lbm per 1000 lbm fuel

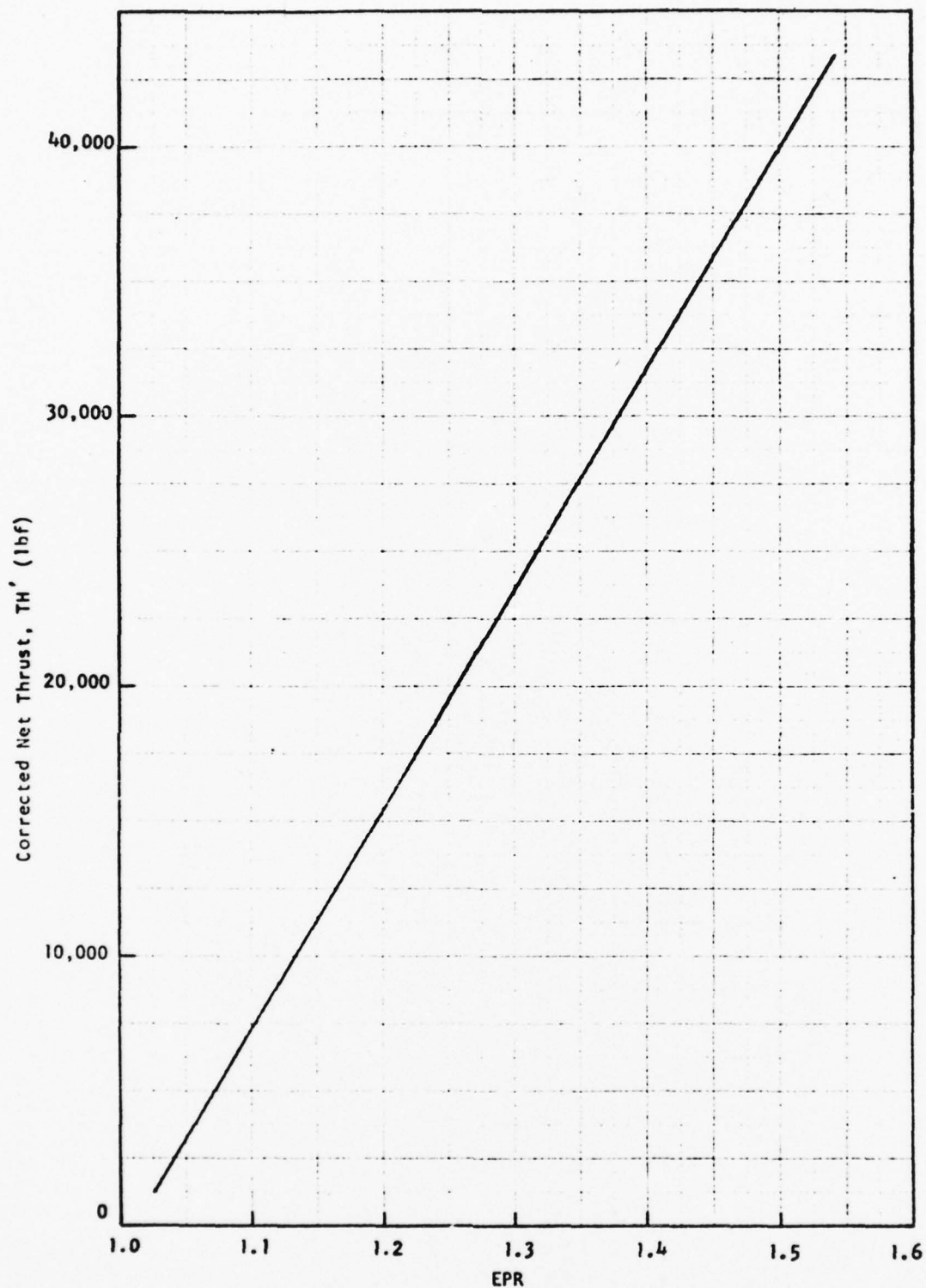


Figure 2. Estimated Engine Thrust versus  
Engine Pressure Ratio Characteristic

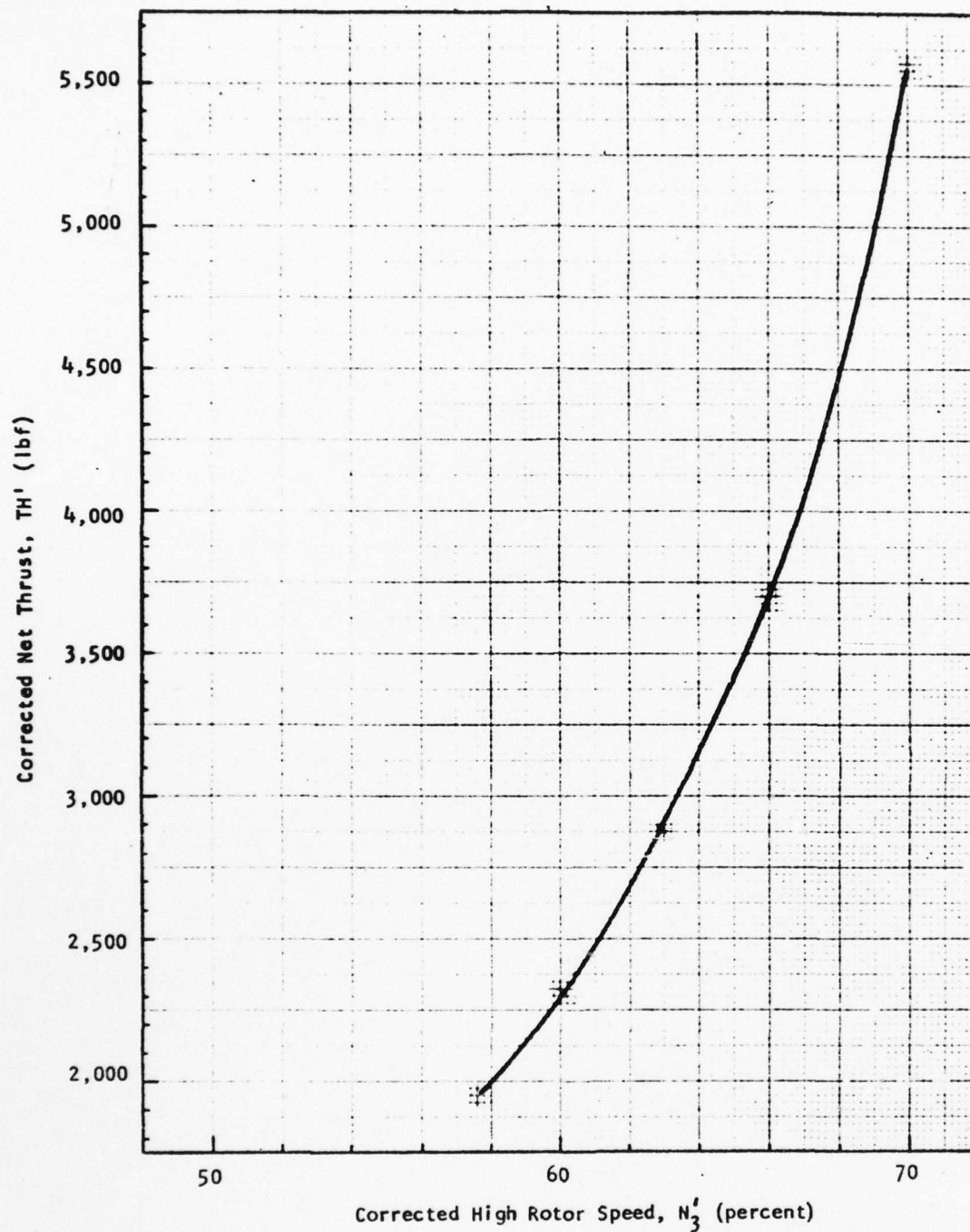


Figure 3. Estimated Engine Thrust versus Corrected High Rotor Speed in the Idle Regime

Name	Symbol	Description	Unit
NO EI	$EI_{NO}$	<p>Emission index of NO (Ref 3)</p> $EI_{NO} = \frac{M_{NO_2} \times \frac{NO}{10^4} \times 1000}{(M_C + a \times M_H) \left( \frac{CO}{10^4} + CO_2 + \frac{HC}{10^4} \right)}$ <p>where: <math>M_{NO_2}</math> = molecular weight of <math>NO_2</math></p>	lbm per 1000 lbm fuel
NOX EI	$EI_{NO_x}$	<p>Emission index of <math>NO_x</math> (Ref 3)</p> $EI_{NO_x} = \frac{M_{NO_2} \times \frac{NO_x}{10^4} \times 1000}{(M_C + a \times M_H) \left( \frac{CO}{10^4} + CO_2 + \frac{HC}{10^4} \right)}$	lbm per 1000 lbm fuel
SMK NUMBER FRONT SIDE	SN	<p>Smoke Number (Ref 3)</p> $SN = 100 \times (1 - RS / RW)$ <p>where RS = smoke spot reflectance RW = reflectance of clean filter paper</p>	
SMK NUMBER	SN'	Smoke Number corrected in manner shown in Appendix III of Volume I	lbm per 1000 lbm fuel
NREC CO EI	$(EI_{CO})_{std}$	<p>NREC corrected CO emission index (see Appendix II of Volume I)</p> $(EI_{CO})_{std} = \frac{F_{CO}}{(F_{CO})_{std}} \times EI_{CO}$	lbm per 1000 lbm fuel
NREC HC EI	$(EI_{HC})_{std}$	<p>NREC corrected HC emission index (see Appendix II of Volume I)</p> $(EI_{HC})_{std} = \frac{F_{HC}}{(F_{HC})_{std}} \times EI_{HC}$	lbm per 1000 lbm fuel
NRE CNO EI	$(EI_{NO_x})_{std}$	<p>NREC corrected NO emission index (see Appendix II of Volume I)</p> $(EI_{NO})_{std} = \frac{(F_{NO})_{std}}{F_{NO}} \times EI_{NO}$	lbm per 1000 lbm fuel



Name	Symbol	Description	
NR CNOX EI	$(EI_{NO_x})_{std}$	NREC corrected NO <sub>x</sub> emission index (see Appendix II of Volume I)	lbm per 1000 lbm fuel
		$(EI_{NO_x})_{std} = \frac{(F_{NO_x})_{std}}{F_{NO}} \times EI_{NO_x}$	
FCO	$F_{CO}$	CO emission factor	
		$F_{CO} = \left[ \frac{P_{b,obs}}{P_{b,ref}} \right]^{3/4} \cdot \left[ \frac{T_{b,obs}}{T_{b,ref}} \right]^{1/2} \cdot \frac{e^{T_{b,obs}/(B - F/A_{obs} \times 10^4)}}{e^{T_{b,ref}/(B - F/A_{ref} \times 10^4)}}$ <p>where: <math>B = 600</math> for modes 1,2,6,7,8  <math>B = 525</math> for modes 3,4,5  and <math>P_{b,ref} = P_{a,ref} \cdot f_1 \left( N_{2,ref} / \sqrt{\frac{T_{a,ref}}{518.7}} \right)</math>  <math>T_{b,ref} = \frac{T_{a,ref}}{518.7} \cdot f_2 \left( N_{2,ref} / \sqrt{\frac{T_{a,ref}}{518.7}} \right)</math>  <math>P_{b,obs} = P_{a,obs} \cdot f_1 \left( N_{2,obs} / \sqrt{\frac{T_{a,obs}}{518.7}} \right)</math>  <math>T_{b,obs} = \frac{T_{a,obs}}{518.7} \cdot f_2 \left( N_{2,obs} / \sqrt{\frac{T_{a,obs}}{518.7}} \right)</math></p> <p>where <math>f_1 = P_b/P_a</math> and <math>f_2 = T_b/(T_a/518.7)</math>, and <math>P_b</math> and <math>T_b</math> are obtained from curves supplied by Rolls-Royce (1971) Ltd. (see Fig. 4)</p> <p>Subscript "obs" refers to actual values or values observed for a particular test and mode.</p> <p>Subscript "ref" refers to reference values, arbitrarily chosen as the average values for the baseline tests (and at take-off power where appropriate)</p> <p>The reference values were:</p> <p><math>F/A_{ref} = 0.0180</math>  <math>N_{2,ref} = 6800</math> rpm  <math>P_{a,ref} = 30.00</math> in Hg abs  <math>T_{a,ref} = 520.0</math> deg R</p>	

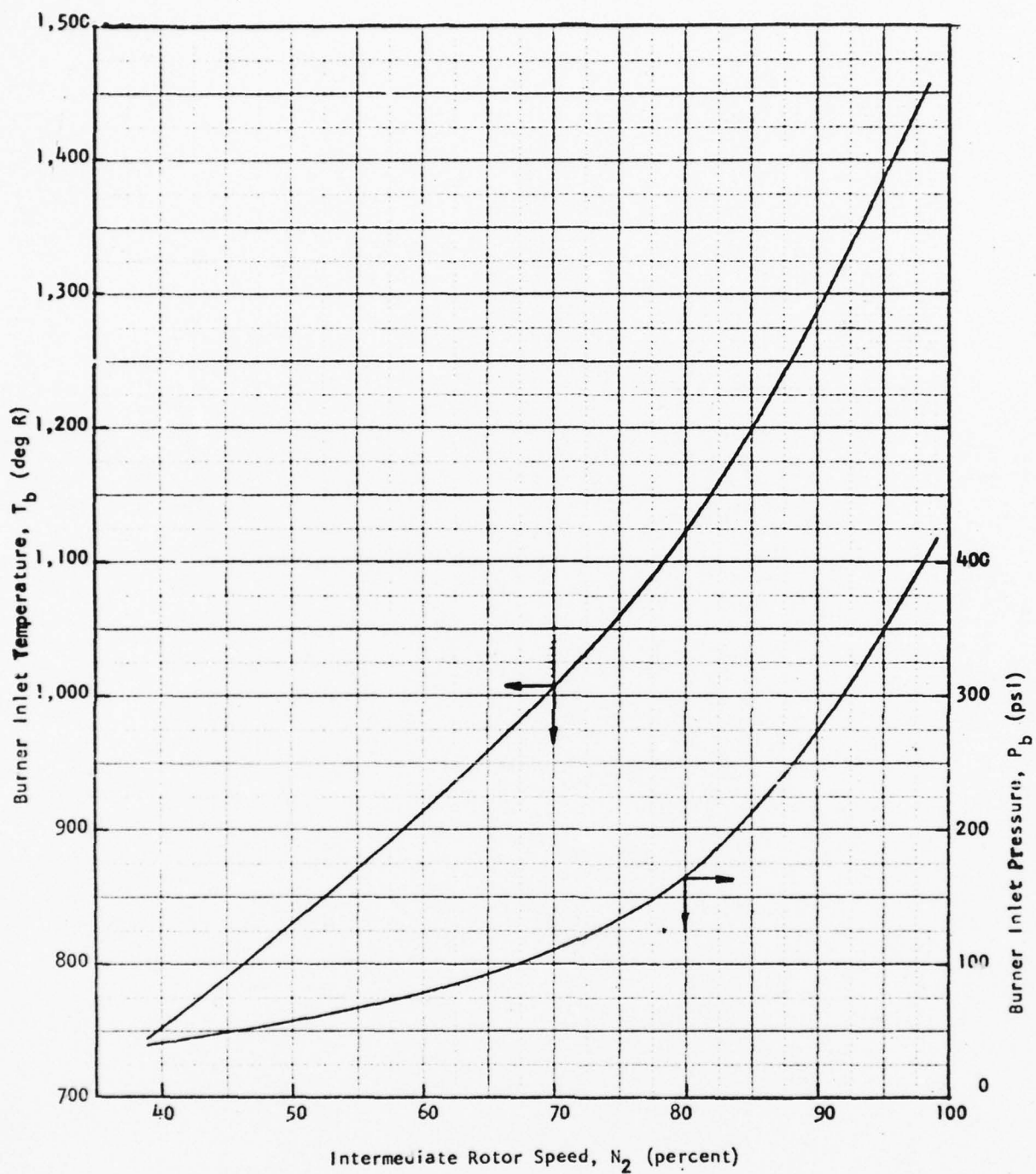


Figure 4. Typical Production Engine Performance

Name	Symbol	Description
FHC	$F_{HC}$	<p>HC emission factor</p> $F_{HC} = \left[ \frac{P_{b,obs}}{P_{b,ref}} \right]^{1.8} \left[ \frac{T_{b,obs}}{T_{b,ref}} \right]^{1/2} \cdot e^{0.00222 (T_{b,obs} - T_{b,ref})}$
FNO	$F_{NO}$	<p>NO emission factor</p> $F_{NO} = \left[ \frac{P_{b,obs}}{P_{b,ref}} \right]^{1/2} \cdot e^{\{0.00267 (T_{b,obs} - T_{b,ref}) - 19H\}}$
STD FCO	$(F_{CO})_{std}$	<p>Corrected CO emission factor</p> $(F_{CO})_{std} = \left[ \frac{P_{b,std}}{P_{b,ref}} \right]^{3/4} \left[ \frac{T_{b,std}}{T_{b,ref}} \right]^{1/2} \cdot \frac{e^{T_{b,std}/\{B - T_{a,std} (F/A_{obs}/T_{a,obs}) \times 10^4\}}}{e^{T_{b,ref} (B - F/A_{ref} \times 10^4)}}$ <p>where: <math>B = 600</math> for modes 1,2,6,7,8  <math>B = 525</math> for modes 3,4,5</p> <p>and</p> $P_{b,std} = P_{a,std} \cdot f_1 \left( N_{2,std} \sqrt{\frac{T_{a,std}}{518.7}} \right)$ $T_{b,std} = \frac{T_{a,std}}{518.7} \cdot f_2 \left( N_{2,std} \sqrt{\frac{T_{a,std}}{518.7}} \right)$ <p>The values of the engine operating parameters in the standardized emission factors may be obtained by assuming that corrected thrust remains constant. Therefore,</p> $\frac{F/A}{T_a} \text{ and } \frac{N_2}{T_a}$ <p>remain constant, and the equations for <math>T_{b,std}</math> and <math>P_{b,std}</math> should be modified to read:</p> $P_{b,std} = P_{a,std} \cdot f_1 \left( N_{2,obs} \sqrt{\frac{T_{a,obs}}{518.7}} \right)$ $T_{b,std} = \frac{T_{a,obs}}{518.7} \cdot f_2 \left( N_{2,obs} \sqrt{\frac{T_{a,obs}}{518.7}} \right)$

Name	Symbol	Description
STD FCO Continued		Subscript "std" refers to standard day conditions (i.e., 518.7 deg R, 29.92 in Hg abs and 0.0 lbm H <sub>2</sub> O/lbm dry air), or a value corrected to standard day condition.
STD FHC	$(F_{HC})_{std}$	Corrected HC emission index $(F_{HC})_{std} = \left[ \frac{P_{b,std}}{P_{b,ref}} \right]^{1.8} \cdot \left[ \frac{T_{b,std}}{T_{b,ref}} \right]^{1/2} \cdot e^{0.00222 (T_{b,std} - T_{b,ref})}$
STD FNO	$(F_{NO})_{std}$	Corrected NO emission index $(F_{NO})_{std} = \left[ \frac{P_{b,std}}{P_{b,ref}} \right]^{1/2} \cdot e^{0.00267 (T_{b,std} - T_{b,ref})}$
API		Specific gravity of jet fuel measured at 60 deg F using "Relative Density or Density of Liquid-Balance Method" and converted to API gravity using a conversion table.
H/C RATIO	a	Hydrogen-carbon ratio as determined using a Sanda-Carlo Erba Model 1100 elemental analyzer and the indium sample encapsulation technique.
FIA		Fluorescent Indicator Adsorption - Fuel samples were analyzed for paraffin, olefin, and aromatic content using the ASTM Method D1319-70.



#### 4. EMISSIONS AND ANALYSIS DATA

The data which appears on the following pages consists of actual test data as well as calculated values which were used for analysis purposes. In examining this data, certain points should be noted, as listed below:

1. Data has been rounded off to no more than 4 significant figures.
2. In some instances, the NO analyzer gave higher readings than the NO<sub>x</sub> analyzer. In these cases, the NO<sub>x</sub> emission index and the NREC corrected emission index were set equal to the corresponding NO values. The NO<sub>x</sub> concentration and the FAA corrected emission index were not changed.
3. In certain tests, smoke data could not be obtained for a particular mode. Values of 0.0 are printed in the tables for these cases.
4. The CO results for modes 3 through 5 of the Baseline test of unit 19 were unusually high. There is no present explanation for this and the data was not used for analysis purposes.
5. The calibration gas concentrations for NO and NO<sub>x</sub> were questionable for the nominal 50 ppm bottle for tests conducted between October 10, 1975 and June 14, 1976; and for the nominal 200 ppm bottle for tests conducted between November 18, 1975 and April 22, 1976. The test data was processed in two different ways: the first assuming the stated concentrations were correct; and the second using calculated values for the concentrations. This is discussed in detail in Appendix IV of Volume I. In the following tables, the concentrations and emission indices of NO and NO<sub>x</sub> are based on the stated calibration gas concentrations, while the NREC corrected emission indices are based on the calculated values.



6. The following items of data were found to be erroneous and were changed in the data base:

Unit Number	Test Series	Mode	Quantity
1	"Baseline"	8	N3
1	"600-Hour"	1	N3
3	"Baseline"	8	N3, Fuel Flow
3	"600-Hour"	3	Fuel Flow
6	"Baseline"	4	EGT
7	"600-Hour"	2,7	N2
9	"Baseline"	8	Fuel Flow
11	"450-Hour"	2	N3
12	"300-Hour"	8	Fuel Flow
12	"600-Hour"	2	N3
16	"150-Hour"	7	N3

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UNIT	TSO HR	TSB HR	AMB TEMP DEG R	AMB PRESS IN HG	AMB HUMID LR H2O/AIR
1	2294.	0.	525.7	30.07	.007200
2	5934.	0.	525.7	30.07	.007200
3	3018.	0.	523.7	30.00	.006550
4	5097.	0.	523.7	30.00	.006550
5	3983.	0.	524.7	30.08	.008600
6	4928.	0.	524.7	30.08	.008600
7	4405.	0.	543.7	29.90	.006830
8	1221.	0.	543.7	29.90	.006830
9	5429.	0.	543.7	29.90	.006180
10	3713.	0.	543.7	29.90	.006180
11	2941.	0.	526.7	29.99	.007580
12	859.	0.	526.7	29.99	.007580
13	2889.	0.	524.7	30.05	.009220
14	1375.	0.	524.7	30.05	.009220
15	2410.	0.	527.7	30.08	.009140
16	3372.	0.	523.7	29.96	.008870
17	6295.	0.	523.7	29.96	.008870
18	2715.	0.	526.7	29.92	.010060
19	4095.	0.	526.7	29.92	.010060

RR211-228 \* BASELINE TEST SERIES \*

MODE 1

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1	25.00	46.00	63.00	24.83	45.69	62.58
2	-26.50	-49.50	-64.75	-26.32	-49.17	-64.32
3	-27.50	44.50	62.00	-27.37	44.29	61.70
4	24.00	45.00	63.00	23.89	44.78	62.70
5	25.00	46.00	64.00	24.86	45.74	63.63
6	23.00	44.00	62.00	22.87	43.75	61.64
7	24.00	46.00	64.00	23.44	44.93	62.51
8	25.00	-48.00	-65.00	24.42	-46.88	63.49
9	24.00	45.00	63.50	23.44	43.95	62.02
10	-26.00	-49.00	-65.00	-25.40	-47.86	63.49
11	25.00	46.00	63.25	24.81	45.65	62.77
12	23.00	45.00	62.50	22.82	44.66	62.02
13	24.00	45.00	63.00	23.86	44.74	62.64
14	24.00	44.00	62.50	23.86	43.75	62.14
15	22.00	-41.50	61.00	21.81	-41.14	60.48
16	23.00	44.00	62.00	22.89	43.79	61.70
17	22.00	43.00	61.00	21.89	42.79	60.71
18	-27.00	47.00	64.00	-26.79	46.64	63.51
19	-26.00	47.00	-65.00	-25.80	46.64	-64.50

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22A \* BASELINE TEST SERIES \*

MODE 1

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LBF
1	-1800.	.8390	-.9800	1045.	1.030	2802.
2	-1700.	.8330	-.9260	106A.	1.030	-3243.
3	1600.	.8070	.8710	1063.	1.028	2634.
4	1500.	.8070	.8170	1032.	1.029	2832.
5	1600.	.8210	.8710	1050.	1.029	3060.
6	1600.	.8210	.8710	1050.	1.030	2615.
7	1580.	.8210	.8610	1077.	1.018	2804.
8	1600.	.8400	.8710	1086.	1.016	3039.
9	1600.	.8630	.8710	106A.	1.025	2706.
10	-1800.	.8920	-.9800	1086.	1.022	3039.
11	-1700.	.8540	-.9260	1063.	1.023	2847.
12	1500.	.8620	.8170	1050.	1.023	2698.
13	1500.	-.9660	.8170	1064.	1.030	2816.
14	1550.	.8290	.8440	1032.	1.015	2717.
15	1500.	.8290	.8170	1054.	1.010	2343.
16	1600.	-.9580	.8710	-1104.	1.025	2637.
17	1500.	.8860	.8170	1050.	1.025	2438.
18	1600.	.8870	.8710	106A.	1.025	3044.
19	-1700.	-.9000	-.9260	106A.	1.025	-3310.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

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MODE 1

UNIT	CORR FU FL LBM/HR	COR CB F/A X100	COR PF F/A X100	CORR Y17 DEG R	COR THRUST LBF
1	-1821.	.8270	-.9670	1031.	2816.
2	-1720.	.8210	-.9140	1053.	-3260.
3	1612.	.7990	.8630	1053.	2641.
4	1511.	.7990	.8090	1022.	2840.
5	1618.	.8120	.8610	1038.	3076.
6	1618.	.8120	.8610	1038.	2629.
7	1617.	.7830	.8210	1027.	2802.
8	1637.	.8020	.8310	1036.	3037.
9	1637.	.8240	.8310	1019.	2705.
10	-1842.	.8510	-.9350	1036.	3037.
11	-1717.	.8410	-.9120	1047.	2854.
12	1515.	.8490	.8050	1034.	2705.
13	1515.	-.9550	.8080	1052.	2828.
14	1566.	.8200	.8350	1020.	2728.
15	1521.	.8150	.8030	1036.	2396.
16	1610.	-.9490	.8630	-1093.	2641.
17	1509.	.8780	.8090	1040.	2442.
18	1612.	.8740	.8580	1051.	3044.
19	-1713.	-.8950	-.9120	1051.	-3310.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



R8211-22R • BASELINE TEST SERIES •

MODE 1

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.529	836.0	478.2	8.1	12.9
2	1.515	-726.0	519.5	-12.2	-15.7
3	1.443	908.3	524.4	4.9	11.5
4	1.477	859.9	427.8	6.6	12.6
5	1.490	871.2	489.6	8.7	12.1
6	1.481	888.3	512.1	8.0	11.1
7	1.551	760.3	-324.8	4.5	12.0
8	1.588	-715.3	-351.1	8.1	13.4
9	1.599	878.0	414.9	5.7	12.1
10	-1.689	784.3	-353.7	8.7	13.9
11	1.585	794.3	418.5	7.1	12.9
12	1.569	862.8	507.0	6.5	12.8
13	-1.834	787.3	381.7	6.6	13.0
14	1.514	830.3	466.4	6.0	9.3
15	1.475	848.7	518.6	4.8	8.4
16	-1.775	870.8	493.0	-9.5	12.7
17	1.595	-943.1	561.1	6.2	10.0
18	1.649	-754.5	445.9	8.8	-15.2
19	-1.679	898.4	451.1	7.9	13.8

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22B \* BASELINE TEST SERIES \*

MODE 1

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	2752.	95.75	94.10	1.52	2.42	0.00
2	2746.	83.78	102.98	-2.32	-2.93	0.00
3	2701.	108.20	107.30	.95	2.25	0.00
4	2764.	102.41	87.52	1.29	2.46	0.00
5	2740.	101.91	98.39	-1.64	2.32	0.00
6	2724.	103.99	102.99	1.54	2.14	0.00
7	-2849.	88.89	-65.24	.87	2.31	0.00
8	-2850.	-81.72	-68.90	1.51	2.52	0.00
9	2794.	97.65	79.29	1.05	2.21	0.00
10	-2853.	84.33	-65.33	1.54	2.46	0.00
11	2650.	89.35	80.86	1.32	2.39	0.00
12	2746.	96.10	97.00	1.18	2.33	0.00
13	-2850.	-78.13	-65.08	1.07	2.12	0.00
14	2755.	96.16	92.79	1.15	1.77	0.00
15	2723.	98.36	103.27	.91	1.61	0.00
16	2793.	87.18	84.80	1.56	2.09	0.00
17	2716.	102.19	104.44	1.10	1.78	0.00
18	2803.	-81.62	82.88	1.56	-2.70	0.00
19	2785.	94.84	81.82	1.37	2.39	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22R \* BASELINE TEST SERIES \*

MODE 1

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	1.3980	.6020	3.6740	1.3500	.5780	4.0390
2	-1.6450	-.8110	-4.3470	-1.5880	-.7790	-4.7710
3	1.2700	.5180	3.3980	1.2410	.5040	3.7180
4	1.3060	.5440	3.4960	1.2750	.5300	3.8450
5	1.3880	.6020	3.5660	1.3460	.5810	4.0470
6	1.2450	.4950	3.1910	1.2080	.4770	3.6250
7	1.4270	.5990	-3.9180	1.2800	.5380	3.8760
8	-1.5860	-.7170	-4.3390	1.4190	-.6420	-4.2790
9	1.3680	.5430	3.7460	1.2260	.4870	3.6670
10	-1.6910	-.7800	-4.6100	-1.5080	-.6980	-4.4850
11	1.4040	.5990	3.6560	1.3520	.5760	4.0300
12	1.3340	.5440	3.4610	1.2850	.5230	3.8170
13	1.3760	.5460	3.3370	1.3340	.5280	3.8350
14	1.2470	.4940	3.1520	1.2110	.4770	3.6250
15	-1.0830	-.3790	-2.7540	-1.0390	-.3620	-3.1130
16	1.2920	.4910	3.1580	1.2620	.4790	3.6330
17	1.1930	.4430	2.9810	1.1660	.4320	3.4310
18	-1.4870	.6520	3.6580	-1.4340	.6290	4.2300
19	-1.4970	.6520	3.6580	-1.4430	.6290	4.2300

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B \* BASELINE TEST SERIES \*

MODE 1

UNIT	NREC CO EI LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBFR CORRECTED
1	99.15	97.93	1.79	2.86	0.00
2	-86.83	107.28	-2.73	-3.51	0.00
3	110.79	110.20	1.12	2.66	0.00
4	104.87	89.90	1.53	2.91	0.00
5	105.08	102.01	-2.04	2.82	0.00
6	107.16	106.73	1.87	2.61	0.00
7	99.12	-72.70	.93	2.45	0.00
8	91.34	76.92	1.49	2.49	0.00
9	108.91	88.26	1.02	2.16	0.00
10	94.51	-73.00	1.50	2.39	0.00
11	92.76	84.13	1.45	2.63	0.00
12	99.75	100.89	1.31	2.58	0.00
13	-80.57	-67.34	1.23	2.43	0.00
14	99.02	95.99	1.32	2.03	0.00
15	102.60	108.31	1.03	1.82	0.00
16	89.27	96.87	1.79	2.40	0.00
17	104.55	106.97	1.26	2.05	0.00
18	-84.65	85.88	1.80	-3.12	0.00
19	98.38	84.79	1.58	2.77	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22R • BASELINE TEST SERIES •

MODE 2

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1	-28.50	-52.00	67.00	-28.31	51.65	66.55
2	-29.00	-52.50	67.00	-28.81	-52.15	66.55
3	27.00	50.00	67.00	26.87	49.76	66.68
4	27.00	51.00	66.50	26.87	50.76	66.18
5	27.00	50.00	66.00	26.85	49.71	65.62
6	27.00	50.00	66.00	26.85	49.71	65.62
7	27.00	50.00	67.00	26.37	48.84	65.44
8	27.00	50.00	66.00	26.37	48.84	64.46
9	27.00	50.00	66.00	26.37	48.84	64.46
10	-29.00	-54.00	-67.50	-28.33	-52.74	65.93
11	-28.00	-52.00	66.00	-27.79	51.60	65.50
12	-26.00	49.00	65.00	-25.80	48.63	64.50
13	27.00	49.50	65.50	26.85	49.22	65.12
14	27.00	49.00	65.00	26.85	48.72	64.63
15	27.50	-47.75	65.00	27.26	-47.34	64.44
16	27.00	51.00	67.00	26.87	50.76	66.68
17	27.00	50.00	66.00	26.87	49.76	65.68
18	-29.00	-52.00	67.00	-28.78	51.60	66.49
19	-29.00	-52.00	67.00	-28.78	51.60	66.49

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



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MODE 2

UNIT	FUEL FLOW LBM/HR	CB F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LRF
1	-1950.	.8480	-1.0620	1068.	1.035	3944.
2	-1900.	.8290	-1.0350	1086.	1.035	3944.
3	1800.	.8290	.9800	1059.	1.032	-4012.
4	1750.	.8110	.9530	1066.	1.031	3784.
5	1800.	.8190	.9800	1068.	1.031	3589.
6	1800.	.8160	.9800	-1041.	1.032	3589.
7	1700.	.8360	.9260	-1104.	1.022	3563.
8	1750.	.8490	.9530	-1104.	1.020	3301.
9	1700.	.8570	.9260	1068.	1.030	3301.
10	-2000.	-.9090	-1.0890	-1104.	1.030	3694.
11	-1900.	.8630	-1.0350	1077.	1.031	3567.
12	1700.	.8620	.9260	1068.	1.025	3302.
13	1825.	.8060	.9940	1068.	1.035	3461.
14	1800.	.8500	.9800	1050.	1.026	3328.
15	1700.	.8310	.9260	1068.	1.030	3276.
16	-2000.	-.9760	-1.0890	-1140.	1.035	-4017.
17	1800.	.8850	.9800	1068.	1.035	3621.
18	1800.	.8870	.9800	1077.	1.030	3935.
19	-1900.	-.9200	-1.0350	1086.	1.032	3935.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-228 \* BASELINE TEST SERIES \*

MODE 2

UNIT	CORR FU FL LBM/HR	COR CB F/A X100	COR PF F/A X100	COR TT7 DEG R	COR THRUST LBF
1	-1973.	.8370	-1.0480	1053.	3964.
2	-1922.	.8180	1.0210	1071.	3964.
3	1813.	.8210	.9710	1049.	-4023.
4	1763.	.8030	.9440	1056.	3794.
5	1820.	.8100	.9690	1055.	3609.
6	1820.	.8060	.9690	-1029.	3609.
7	1739.	.7970	.9830	1053.	3560.
8	1790.	.8100	.9090	1053.	3209.
9	1739.	.8180	.9830	-1019.	3299.
10	-2046.	.8680	-1.0390	1053.	3691.
11	-1919.	.8500	1.0190	1060.	3575.
12	1717.	.8490	.9120	1051.	3310.
13	1844.	.7970	.9830	1055.	3476.
14	1818.	.8410	.9690	1038.	3342.
15	1724.	.8170	.9100	1049.	3293.
16	-2012.	-.9670	-1.0790	-1129.	-4023.
17	1811.	.8770	.9710	1058.	3625.
18	1814.	.8730	.9660	1060.	3935.
19	-1915.	-.9060	1.0190	1069.	3935.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 • BASELINE TEST SERIES •

MODE 2

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.612	664.9	329.1	7.5	15.8
2	1.556	664.3	376.6	-11.7	16.8
3	1.553	724.0	375.1	5.2	14.3
4	1.542	708.2	298.9	6.8	15.3
5	1.522	788.1	401.2	-9.2	13.4
6	1.518	758.8	399.6	8.4	13.2
7	1.607	673.9	-268.2	5.0	15.4
8	1.623	685.0	307.8	6.3	15.0
9	1.617	788.7	342.3	5.8	14.4
10	-1.753	701.0	289.0	8.3	17.0
11	1.643	686.7	326.1	7.3	16.3
12	1.602	780.3	423.3	6.1	14.9
13	1.511	729.5	347.0	4.8	16.0
14	1.592	734.3	387.5	5.5	12.7
15	1.551	713.5	396.0	-3.8	11.6
16	-1.880	706.6	329.5	8.2	-17.5
17	1.670	736.9	376.3	7.2	14.3
18	1.684	659.9	358.7	7.6	12.8
19	-1.742	793.0	351.4	7.5	16.4

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22B • BASELINE TEST SERIES •

MODE 2

UNIT	CO2 EI LB/KLR FU	CO EI LB/KLR FU	HC EI LB/KLR FU	NO EI LB/KLR FU	NOX EI LB/KLR FU	SMK NUMBER FRONT SIDE
1	2867.	75.26	64.00	1.40	2.95	0.00
2	2834.	76.98	74.96	-2.23	-3.20	0.00
3	2828.	83.90	74.67	1.00	2.72	0.00
4	2867.	83.82	60.78	1.31	2.98	0.00
5	2803.	-92.39	80.80	-1.78	2.58	0.00
6	2807.	89.35	80.84	-1.62	2.55	0.00
7	-2901.	77.40	-52.93	.95	2.90	0.00
8	-2882.	77.41	59.76	1.17	2.78	0.00
9	2845.	89.35	65.87	1.07	2.64	0.00
10	-2905.	-73.93	-52.76	1.44	2.94	0.00
11	2872.	76.38	62.31	1.34	2.98	0.00
12	2804.	86.92	81.01	1.12	2.73	0.00
13	2829.	86.91	71.93	.94	2.73	0.00
14	2824.	82.90	75.16	1.01	2.75	0.00
15	2815.	82.41	79.58	-0.72	2.19	0.00
16	-2901.	-69.40	-55.60	1.33	2.82	0.00
17	2845.	79.91	70.11	1.28	2.55	0.00
18	2863.	-71.38	66.67	1.34	2.28	0.00
19	2855.	82.72	62.97	1.28	2.81	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RR211-22B \* BASELINE TEST SERIES \*

MODE 2

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	1.8490	-.9900	-4.8810	1.7820	.9490	5.3520
2	-1.8770	-1.0280	-4.9940	-1.8100	-.9870	-5.4750
3	1.6710	.8400	4.4670	1.6300	.8170	4.9050
4	1.7380	.9100	4.6790	1.6950	.8850	5.1360
5	1.6730	.8450	4.3180	1.6210	.8140	4.8940
6	1.6710	.8450	4.3180	1.6200	.8140	4.8940
7	1.7370	.8480	4.7760	1.5520	.7580	4.6970
8	1.7450	.8480	4.7760	1.5580	.7580	4.6970
9	1.7500	.8480	4.8350	1.5620	.7580	4.6970
10	-2.1260	-1.1590	-5.8240	-1.8880	-1.0320	-5.6250
11	1.8580	-.9860	4.8580	1.7860	.9460	5.3400
12	1.6230	.7760	4.2250	1.5620	.7450	4.6500
13	1.6280	.8100	4.1660	1.5790	.7820	4.7810
14	1.6130	.7770	4.0690	1.5650	.7510	4.6710
15	-1.5230	-.7020	3.8840	-1.4570	-.6680	-4.3750
16	1.8330	.9080	4.4740	1.7880	.8850	5.1360
17	1.7000	.8380	4.2710	1.6600	.8170	4.9050
18	-1.8690	.9820	4.6290	1.8000	.9460	5.3400
19	-1.8900	.9820	4.6290	-1.8190	.9460	5.3400

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RR211-22R • BASELINE TEST SERIES •

MODE 2

UNIT	NREC CO EI LB/KLR FU	NREC HC EI LB/KLR FU	NRE CNO EI LB/KLR FU	NR CNOX EI LB/KLR FU	SMK NUMBER CORRECTED
1	78.06	66.71	1.64	3.47	0.00
2	79.84	78.15	-2.62	-3.77	0.00
3	86.01	76.77	1.18	3.20	0.00
4	85.94	62.50	1.55	3.52	0.00
5	-95.34	83.85	-2.15	3.14	0.00
6	92.20	83.82	-1.97	3.11	0.00
7	86.65	59.19	1.00	3.07	0.00
8	86.71	66.84	1.15	2.74	0.00
9	-98.98	73.67	1.04	2.57	0.00
10	83.29	-58.77	1.39	2.84	0.00
11	79.44	64.94	1.47	3.27	0.00
12	90.32	84.35	1.23	3.00	0.00
13	89.60	73.57	1.08	3.13	0.00
14	85.48	77.84	1.16	2.69	0.00
15	86.16	82.60	-0.81	2.47	0.00
16	-71.16	-57.03	1.53	3.23	0.00
17	81.88	71.90	1.47	2.93	0.00
18	-74.14	69.19	1.55	2.63	0.00
19	85.94	65.35	1.47	3.25	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

R8211-228 \* BASELINE TEST SERIES \*

MODE 3

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1	93.25	97.00	92.00	92.63	96.35	91.39
2	92.75	98.00	91.75	92.13	97.35	91.14
3	93.00	96.00	92.00	92.55	95.54	91.56
4	93.00	96.00	92.00	92.55	95.54	91.56
5	-92.50	98.00	92.00	91.97	97.44	91.47
6	93.50	97.00	92.00	92.96	96.44	91.47
7	94.00	99.00	93.00	91.81	96.70	90.84
8	94.00	99.00	-94.00	91.81	96.70	91.81
9	94.00	-100.00	92.50	91.81	97.67	-90.35
10	-95.00	97.00	92.75	92.79	-94.74	90.59
11	93.50	96.00	92.00	92.79	95.27	91.30
12	93.75	97.00	93.00	93.04	96.26	92.29
13	93.50	97.00	93.50	92.96	96.44	-92.96
14	-91.00	-95.00	-90.00	-90.48	-94.46	-89.48
15	94.00	97.00	92.00	93.19	96.17	91.21
16	93.00	97.00	92.00	92.55	96.54	91.56
17	93.00	98.00	92.00	92.55	97.53	91.56
18	94.00	97.00	93.00	93.28	96.28	92.29
19	94.00	98.00	92.00	93.28	97.25	91.30

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

HR211-22B • BASELINE TEST SERIES •

MODE 3

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT7 DEG R	FPR	THRUST LBF
1	15500.	1.8790	2.0680	1752.	1.537	42083.
2	16000.	1.8130	2.1350	1761.	-1.539	42229.
3	15700.	1.7880	2.0990	1716.	1.530	41668.
4	15500.	-1.7340	2.4720	1711.	1.530	41668.
5	15900.	1.8170	2.1420	1725.	-1.523	-41045.
6	15500.	1.8690	2.0680	1752.	1.533	41777.
7	15800.	1.8990	2.1120	1752.	1.530	41807.
8	16000.	1.8530	2.1390	-1797.	1.530	41807.
9	15000.	1.9150	2.0010	1770.	1.533	42028.
10	16000.	-1.9340	2.1350	1770.	1.532	41955.
11	15750.	1.8560	2.1010	1752.	1.533	41902.
12	15750.	-1.9390	2.1010	1747.	1.533	41902.
13	15000.	1.7530	2.0080	1711.	1.529	41525.
14	-14000.	-1.7210	-1.9490	1707.	-1.492	-38817.
15	15750.	1.8470	2.1010	1734.	1.533	1777.
16	15000.	1.8120	2.0220	1734.	-1.522	-41136.
17	15000.	1.8860	2.0220	1752.	-1.522	-41136.
18	15900.	1.8730	2.1210	1734.	1.533	42000.
19	15500.	1.8750	2.0680	1752.	1.532	41926.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 • BASELINE TEST SERIES •

MODE 3

UNIT	CORR FU FL LBM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
1	15682.	1.8540	2.0400	1728.	42294.
2	16188.	1.7890	2.1060	1737.	-42441.
3	15818.	1.7710	2.0790	1699.	41779.
4	15616.	-1.7210	2.0530	1695.	41779.
5	16077.	1.7960	2.1170	1705.	-41265.
6	15673.	1.8480	2.0440	1732.	42000.
7	16165.	1.8120	2.0150	-1671.	41779.
8	16370.	1.7680	2.0410	1714.	41779.
9	15347.	1.8270	-1.9090	1688.	42000.
10	16370.	1.8450	2.0370	1688.	41926.
11	15908.	1.8280	2.0690	1725.	42000.
12	15908.	-1.9100	2.0690	1721.	42000.
13	15152.	1.7330	1.9850	1692.	41706.
14	-14142.	-1.7010	-1.9270	1687.	-38985.
15	15971.	1.8160	2.0660	1704.	42000.
16	15092.	1.7940	2.0030	1717.	-41191.
17	15092.	1.8680	2.0030	1735.	-41191.
18	16022.	1.8450	2.0890	1707.	42000.
19	15619.	1.8460	2.0370	1725.	41926.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-22B • BASELINE TEST SERIES •

MODE 3

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	3.942	-11.3	8.7	458.4	-463.3
2	3.840	27.2	4.9	442.9	457.1
3	3.790	27.2	2.7	414.2	426.6
4	3.683	16.9	5.8	405.9	421.1
5	3.858	21.4	6.7	406.8	391.4
6	3.970	24.5	5.9	416.1	397.9
7	4.034	23.0	3.4	-473.3	-473.0
8	3.933	23.9	4.0	-461.1	-468.4
9	4.065	19.8	3.6	457.0	448.0
10	-4.107	26.1	3.8	445.8	439.7
11	3.935	22.1	4.4	437.8	448.7
12	-4.115	26.1	6.6	417.6	437.2
13	3.710	19.9	3.6	378.4	377.6
14	-3.639	-38.1	6.0	-317.1	-327.6
15	3.915	-9.6	4.5	418.9	426.9
16	3.840	25.9	-0.5	396.7	391.4
17	4.000	26.7	3.7	393.7	396.2
18	3.966	28.3	6.2	402.8	393.2
19	3.960	-131.9	3.8	399.3	407.8

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RB211-22B • BASELINE TEST SERIES •

MODE 3

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	3157.	-.57	.75	38.00	38.41	27.15
2	3157.	1.16	.44	38.07	39.30	27.15
3	3162.	1.44	.25	36.13	37.21	33.11
4	3162.	.92	.55	36.43	37.80	32.00
5	3166.	1.12	.60	34.91	34.91	33.33
6	3166.	1.25	.51	34.69	34.69	31.33
7	3165.	1.15	.29	38.82	38.82	-48.03
8	3164.	1.22	.35	38.78	39.39	28.29
9	3163.	.98	.31	17.17	37.17	31.13
10	3162.	1.28	.32	35.88	35.88	-22.67
11	3160.	1.13	.43	36.75	37.66	31.33
12	3159.	1.28	.55	33.52	35.10	34.44
13	3158.	1.07	.34	33.67	33.67	33.77
14	3156.	-2.10	.57	-28.75	-29.70	-36.42
15	3159.	-.49	.39	35.33	36.00	-19.74
16	3161.	1.36	-.04	34.13	34.13	31.54
17	3160.	1.34	.32	32.51	32.72	28.67
18	3154.	1.43	.54	33.49	33.49	28.95
19	-3147.	-6.67	.33	33.18	33.88	28.76

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

R5211-22B \* BASELINE TEST SERIES \*

MODE 3

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	108.5970	95.4570	86.6920	98.6320	90.0900	92.5350
2	107.9660	105.7370	93.1700	98.2860	99.7470	99.3780
3	87.6870	83.8060	79.3240	82.2470	80.5700	85.4490
4	-82.7990	83.8060	79.3240	-77.7830	80.5700	85.4490
5	107.5630	105.0580	89.8400	99.1580	99.7470	99.3780
6	107.3200	96.0480	84.3390	98.7870	91.2230	93.3450
7	-135.2950	112.3160	-107.5950	97.0320	94.4100	95.6110
8	-127.3810	112.3160	-107.5950	92.0940	94.4100	95.6110
9	-144.0590	-118.7670	-113.3690	102.8500	99.7470	99.3780
10	115.2330	85.6500	89.5440	82.8470	-72.2990	-79.1470
11	94.9320	82.3010	77.9050	85.4920	-77.5630	-83.1500
12	117.0890	94.4710	86.0470	104.7910	88.9700	91.7350
13	93.2220	95.8760	83.3150	86.2750	91.2230	93.3450
14	-73.6350	-73.0050	-68.6350	-68.3600	-69.5340	-77.0270
15	104.3720	94.4510	83.7550	92.4960	87.8640	90.9420
16	99.7890	95.8910	83.6470	93.5380	92.3710	94.1620
17	115.8130	103.5730	88.3150	108.2300	99.7470	99.3780
18	107.4080	94.0750	81.9950	96.6680	88.9700	91.7350
19	117.2140	105.5300	88.9090	105.3630	99.7470	99.3780

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B \* BASELINE TEST SERIES \*

MODE 3

UNIT	NREC CO EI LB/KLB FU	NREC HC EI LB/KLB FU	NRF CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
1	-.63	.80	40.56	41.00	27.15
2	1.28	.46	40.61	41.92	27.15
3	1.54	.25	38.92	40.08	24.60
4	.98	.57	39.25	40.72	24.29
5	1.22	.63	38.62	38.62	26.05
6	1.35	.54	38.40	38.40	24.96
7	1.60	.35	34.49	34.49	22.59
8	1.69	.42	34.46	35.00	25.86
9	1.37	.37	-32.58	-32.58	-31.13
10	1.78	.38	-31.72	-31.72	-19.03
11	1.26	.46	39.22	40.20	25.68
12	1.43	.59	35.74	37.42	22.74
13	1.16	.35	37.72	37.72	25.32
14	-2.26	.60	-32.27	-33.33	23.82
15	-.55	.42	38.36	39.09	19.74
16	1.45	-.04	38.42	38.42	24.60
17	1.43	.33	36.59	36.82	28.67
18	1.59	.57	37.47	37.47	22.59
19	-7.42	.35	37.08	37.87	25.14

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 • BASELINE TEST SERIES •

MODE 4

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1	87.00	94.00	89.50	86.42	93.37	88.90
2	87.00	95.00	89.50	86.42	94.37	88.90
3	87.00	94.00	90.00	86.58	93.55	89.57
4	87.50	95.00	89.00	87.08	94.55	88.57
5	87.00	95.00	90.00	86.50	94.46	89.48
6	88.00	95.00	90.00	87.50	94.46	89.48
7	89.00	95.00	-92.00	86.93	92.79	89.86
8	89.00	95.00	-92.00	86.93	92.79	89.86
9	88.50	96.00	90.25	86.44	93.77	88.15
10	89.00	95.00	90.00	86.93	92.79	-87.91
11	88.00	94.00	89.50	87.33	93.28	88.82
12	88.00	94.00	90.50	87.33	93.28	89.81
13	87.50	94.00	90.00	87.00	93.46	89.48
14	87.00	94.00	-88.00	86.50	93.46	-87.50
15	88.50	94.00	90.00	87.74	93.19	89.23
16	88.00	94.00	89.00	87.58	93.55	88.57
17	87.00	96.00	91.00	86.58	-95.54	90.56
18	88.00	95.00	90.00	87.33	94.28	89.31
19	88.00	94.00	89.50	87.33	93.28	88.82

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RB211-22B \* BASELINE TEST SERIES \*

MODE 4

NIT	FUEL FLOW LBM/HR	CB F/A X100	PERF F/A X100	TTT DEG R	EPR	THRUST LRF
1	-12230.	1.6490	1.8150	-1603.	-1.437	-34824.
2	12700.	1.6040	1.8620	1639.	1.446	35436.
3	-12200.	1.5970	-1.7930	1630.	1.444	35382.
4	12500.	-1.5410	1.8330	1608.	1.446	35518.
5	13000.	1.5810	1.9060	1635.	1.446	35424.
6	13000.	1.6590	1.9060	1653.	1.446	35424.
7	13000.	-1.7220	1.9060	1680.	1.446	35637.
8	-13500.	1.6470	-1.9790	-1698.	1.446	35637.
9	13000.	1.7090	1.9060	1675.	1.446	35637.
10	13000.	-1.7190	1.9060	1662.	1.446	35637.
11	13000.	1.6320	1.9060	1630.	1.446	35530.
12	13000.	1.6650	1.9080	1644.	1.445	35462.
13	12500.	-1.5280	1.8440	1608.	-1.441	-35119.
14	13000.	1.5840	1.9170	-1603.	-1.441	-35119.
15	13000.	1.6530	1.9060	1653.	1.446	35424.
16	13000.	1.6060	1.9220	1644.	-1.439	-35088.
17	13000.	-1.7400	1.9220	1662.	-1.439	-35088.
18	13000.	1.6460	1.9060	1626.	1.446	35613.
19	12500.	1.6420	1.8330	1644.	1.446	35613.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RA211-228 \* BASELINE TEST SERIES \*

MODE 4

UNIT	CORR FU FL LAM/HR	COR CB F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LAF
1	-12394.	1.6270	1.7910	-1582.	-34998.
2	12850.	1.5830	1.8370	1617.	35613.
3	-12291.	1.5820	-1.7760	1615.	35477.
4	12594.	-1.5270	1.8150	1592.	35613.
5	13145.	1.5630	1.8840	1616.	35613.
6	13145.	1.6400	1.8840	1634.	35613.
7	13301.	1.6430	1.8180	1602.	35613.
8	-13812.	1.5710	1.8880	1620.	35613.
9	13301.	1.6310	1.8180	1598.	35613.
10	13301.	1.6400	1.8180	-1585.	35613.
11	13131.	1.6080	1.8770	1605.	35613.
12	13131.	1.6400	1.8790	1619.	35545.
13	12627.	-1.5110	1.8230	1589.	-35272.
14	13132.	1.5660	1.8950	-1585.	-35272.
15	13182.	1.6250	1.8740	1625.	35613.
16	13080.	1.5910	1.9040	1628.	-35135.
17	13080.	-1.7230	1.9040	1646.	-35135.
18	13100.	1.6210	1.8770	1601.	35613.
19	12596.	1.6170	1.8050	1619.	35613.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 \* BASELINE TEST SERIES \*

MODE 4

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	3.485	24.1	5.3	294.3	296.7
2	3.386	34.5	-15.1	290.4	301.0
3	3.379	35.3	1.8	283.1	293.9
4	-3.260	21.4	3.6	279.5	286.6
5	3.347	31.0	4.7	263.6	252.4
6	3.516	28.6	3.4	280.2	269.5
7	-3.651	24.1	2.4	-334.5	-333.8
8	3.488	32.5	2.6	-320.2	-330.4
9	3.621	23.3	2.5	-321.0	310.5
10	-3.639	45.8	2.7	291.4	289.5
11	3.452	33.5	2.8	282.9	289.0
12	3.522	34.2	3.9	276.7	286.6
13	-3.227	30.5	2.5	241.4	242.1
14	3.344	49.4	2.7	242.0	254.4
15	3.495	21.2	2.1	303.9	313.6
16	3.396	32.8	1.7	270.2	273.8
17	-3.684	36.4	1.9	298.4	305.0
18	3.476	39.8	2.6	270.6	271.3
19	3.457	-138.3	1.7	256.7	269.1

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-22B • BASELINE TEST SERIES •

MODE 4

UNIT	CO2 EI LB/LB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	3157.	1.39	.53	27.87	28.09	19.21
2	3153.	2.05	-1.54	28.27	29.30	-11.92
3	3161.	2.10	.18	27.68	28.74	25.66
4	3162.	1.32	.38	28.35	29.06	21.05
5	3165.	1.87	.48	26.06	26.06	17.33
6	-3166.	1.64	.33	26.38	26.38	18.24
7	3165.	1.33	.23	-30.31	-30.31	24.84
8	3164.	1.87	.26	-30.36	-31.33	20.26
9	3162.	1.29	.24	29.30	29.30	14.47
10	3160.	2.53	.25	26.46	26.46	14.47
11	3159.	1.95	.28	27.07	27.65	-28.95
12	3159.	1.95	.38	25.94	27.06	23.33
13	3157.	1.90	.27	24.69	24.76	21.05
14	3155.	2.97	.28	23.87	25.09	25.33
15	3158.	1.22	.20	28.71	29.62	16.00
16	3159.	1.94	.17	26.28	26.62	19.87
17	3159.	1.99	.17	26.75	27.34	19.87
18	3154.	2.30	.26	25.66	25.74	19.46
19	-3145.	-8.01	.17	24.41	25.59	17.11

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 • BASELINE TEST SERIES •

MODE 4

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	61.7770	63.4510	64.9470	56.8740	59.9890	69.5270
2	64.9620	72.6950	71.4140	59.8470	68.6890	76.3770
3	58.5370	63.8810	65.5520	55.2960	61.4660	70.7100
4	60.8590	73.1840	72.0660	57.5340	70.3890	77.6840
5	63.4390	73.1370	69.4790	59.1320	69.5340	77.0270
6	68.8510	73.1370	69.4790	64.0110	69.5340	77.0270
7	72.8540	65.3100	73.0270	54.6270	55.3530	65.7780
8	67.0590	65.3100	73.0270	50.8150	55.3530	65.7780
9	-79.2650	74.8400	-81.3850	59.3220	63.3020	72.1750
10	72.5900	65.3100	73.9250	54.4550	55.3530	65.7780
11	60.5720	62.8010	64.4550	55.7220	59.2640	68.9440
12	62.7040	62.8010	64.4550	57.1530	59.2640	68.9440
13	54.6500	63.7230	62.4260	51.1040	60.7230	70.1150
14	57.7660	63.7230	62.4260	53.9250	60.7230	70.1150
15	61.9900	62.7930	62.7290	55.7780	58.5480	68.3670
16	59.0050	63.7280	62.6830	55.7820	61.4660	70.7100
17	-82.9150	-83.6050	75.8530	-77.9650	-80.5700	-85.4490
18	67.5720	71.6500	67.5410	61.6790	67.8540	75.7330
19	61.0580	62.5370	61.4190	55.8090	59.2640	68.9440

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RB211-228 \* BASELINE TEST SERIES \*

MODE 4

UNIT	NREC CO EI LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
1	1.51	.56	29.83	30.07	19.21
2	2.22	-1.63	30.24	31.34	11.92
3	2.23	.19	29.86	31.00	-24.44
4	1.40	.39	30.56	31.32	18.74
5	2.00	.51	28.89	28.89	17.33
6	1.76	.35	29.24	29.24	16.50
7	1.77	.27	27.30	27.30	20.63
8	2.47	.30	27.35	28.22	19.61
9	1.73	.28	25.99	-25.99	14.47
10	-3.37	.30	-27.54	-27.54	13.60
11	2.14	.30	28.95	29.57	20.78
12	2.14	.40	27.75	28.94	23.33
13	2.03	.28	27.73	27.80	15.86
14	3.18	.30	26.81	28.18	19.90
15	1.36	.27	31.29	32.29	16.00
16	2.05	.18	29.64	30.03	17.47
17	2.11	.18	30.14	30.80	19.87
18	2.52	.28	28.78	28.86	19.03
19	-8.76	.18	27.40	28.72	17.11

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES



RB211-22B • BASELINE TEST SERIES •

MODE 5

JNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1	76.50	89.00	85.00	75.99	88.41	A4.43
2	-76.25	89.00	85.00	-75.74	88.41	A4.43
3	77.00	89.00	86.00	76.63	88.57	A5.59
4	77.00	89.00	85.00	76.63	88.57	A4.59
5	77.00	90.00	86.00	76.56	89.48	A5.51
6	77.00	90.00	86.00	76.56	89.48	A5.51
7	-79.00	90.00	-87.00	77.16	87.91	A4.98
8	77.00	90.00	-84.00	-75.21	87.91	-A2.05
9	77.50	90.00	86.00	-75.70	87.91	-A4.00
10	78.00	90.00	86.00	76.19	87.91	-A4.00
11	77.25	89.50	84.75	76.66	88.82	A4.10
12	77.50	90.00	85.75	76.91	89.31	A5.10
13	77.00	90.00	85.75	76.56	89.48	A5.26
14	77.00	89.00	-84.50	76.56	88.49	-A4.02
15	77.00	89.00	85.50	76.34	88.24	A4.77
16	77.00	89.00	85.00	76.63	88.57	A4.59
17	77.00	89.00	86.00	76.63	88.57	A5.59
18	78.00	90.00	86.00	77.41	89.31	A5.34
19	78.00	89.00	85.00	77.41	88.32	A4.35

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22B • BASELINE TEST SERIES •

MODE 5

UNIT	FUEL FLOW LBM/HR	CB F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LRF
1	8500.	1.3550	1.5800	1464.	1.300	-24289.
2	8700.	1.3120	1.6180	1464.	1.300	-24289.
3	-8200.	1.3050	-1.5190	1459.	1.302	24503.
4	8500.	1.2700	1.5740	1450.	1.302	24503.
5	9000.	1.3070	1.6670	1459.	1.302	24438.
6	9000.	1.3620	1.6670	1473.	1.302	24438.
7	9000.	-1.4100	1.6670	-1500.	1.302	24585.
8	9000.	1.3500	1.6670	-1500.	1.302	24585.
9	8775.	1.4010	1.6250	1495.	1.302	24585.
10	9000.	-1.4200	1.6640	1486.	1.303	24663.
11	8975.	1.3340	1.6620	1473.	1.302	24511.
12	8750.	1.3620	1.6180	1464.	1.303	24589.
13	8500.	1.2650	1.5870	-1435.	-1.298	-24148.
14	8875.	1.3020	1.6570	-1419.	-1.298	-24148.
15	9000.	1.3340	1.6670	1464.	1.302	24438.
16	9000.	1.2980	1.6900	1464.	-1.295	-24985.
17	9000.	1.4040	1.6900	1482.	-1.295	-24985.
18	9000.	1.3380	1.6670	1464.	1.302	24568.
19	9000.	1.3840	1.6670	1464.	1.302	24568.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B \* BASELINE TEST SERIES \*

MODE 5

UNIT	CORR FU FL LBM/HR	COR CB F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
1	8600.	1.3370	1.5590	1444.	24411.
2	8802.	1.2950	1.5960	1444.	24411.
3	-8261.	1.2920	-1.5040	1445.	24568.
4	8564.	1.2580	1.5590	1436.	24568.
5	9100.	1.2920	1.6480	1443.	24568.
6	9100.	1.3470	1.6480	1456.	24568.
7	9208.	1.3450	1.5900	1431.	24568.
8	9208.	1.2880	1.5900	1431.	24568.
9	8978.	1.3370	1.5510	1426.	24568.
10	9208.	1.3550	1.5870	-1418.	24647.
11	9065.	1.3130	1.6370	1450.	24568.
12	8838.	1.3410	1.5930	1441.	24647.
13	8586.	-1.2500	1.5680	-1418.	-24253.
14	8965.	1.2870	1.6380	-1402.	-24253.
15	9126.	1.3120	1.6390	1439.	24568.
16	9055.	1.2860	1.6730	1450.	-24017.
17	9055.	-1.3900	1.6730	1468.	-24017.
18	9069.	1.3180	1.6420	1441.	24568.
19	9069.	1.3630	1.6420	1441.	24568.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 \* BASELINE TEST SERIES \*

MODE 5

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	2.850	64.2	5.9	139.1	142.5
2	2.757	86.2	-9.2	142.1	146.3
3	2.746	77.1	3.9	132.8	141.2
4	2.675	55.4	3.4	130.7	134.5
5	2.754	76.7	7.4	130.4	126.3
6	2.873	76.3	5.3	133.4	129.8
7	-2.976	49.3	2.7	-161.8	-159.9
8	2.847	67.8	3.6	-155.6	-157.7
9	-2.956	58.4	3.2	-144.9	145.7
10	-2.991	99.0	4.6	136.4	136.0
11	2.805	87.3	5.6	128.6	134.2
12	2.866	80.4	6.1	126.4	138.1
13	-2.658	71.4	3.6	113.0	-119.1
14	2.733	103.6	6.4	118.0	128.7
15	2.806	75.3	3.7	135.0	144.0
16	2.730	75.4	4.5	126.3	133.8
17	-2.956	78.8	3.9	133.0	143.7
18	2.810	91.3	5.9	129.1	136.3
19	2.898	-191.9	3.8	126.4	135.5

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 • BASELINE TEST SERIES •

MODE 5

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	3151.	4.52	.71	16.07	16.48	15.89
2	3147.	6.26	-1.15	-16.96	-17.46	8.55
3	3155.	5.64	.40	15.95	16.96	15.79
4	3157.	4.16	.43	16.13	16.59	13.82
5	3154.	5.60	.93	15.63	15.63	12.75
6	3159.	5.34	.64	15.33	15.33	8.05
7	-3161.	3.33	.32	-17.96	-17.96	14.29
8	3159.	4.78	.43	-18.05	-18.29	11.92
9	3158.	3.97	.37	16.19	16.27	13.33
10	3153.	6.64	.53	15.03	15.03	8.55
11	3151.	6.24	.69	15.11	15.76	18.79
12	3152.	5.63	.73	14.53	15.88	16.11
13	3151.	5.39	.47	14.01	14.76	11.33
14	3146.	7.59	.81	14.20	15.49	-20.53
15	3151.	5.38	.46	15.85	16.90	9.93
16	3152.	5.54	.57	15.25	16.16	12.67
17	3153.	5.35	.46	14.84	16.02	8.78
18	3146.	6.50	.72	15.12	15.95	18.42
19	-3136.	-13.22	.45	14.30	15.33	11.84

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RR211-22B \* BASELINE TEST SERIES \*

MODE 5

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	28.7290	31.0010	40.1080	26.8390	29.3940	43.1380
2	27.7420	31.0010	40.1080	25.9480	29.3940	43.1380
3	27.4850	31.0980	40.3770	26.2260	29.9850	43.7020
4	26.7370	31.0980	40.3770	25.5290	29.9850	43.7020
5	30.2360	35.7640	42.6830	28.5140	34.0880	47.5150
6	31.6670	35.7640	42.6830	29.8230	34.0880	47.5150
7	32.7880	32.3580	45.3390	25.9870	27.6960	41.5030
8	31.1380	32.3580	45.3390	24.8300	27.6960	41.5030
9	32.5480	32.3580	-45.8960	25.8190	27.6960	41.5030
10	33.0920	32.3580	-45.8960	26.1990	27.6960	41.5030
11	29.2970	32.5970	41.4250	27.1830	30.8540	44.5290
12	31.4940	35.0870	43.4710	29.1790	33.2000	46.7030
13	29.1820	35.7000	42.1650	27.5690	34.0880	47.5150
14	27.4740	31.0780	38.5010	25.9490	29.6880	43.4190
15	28.2840	30.7920	38.8380	25.9570	28.8150	42.5820
16	27.3100	31.0240	38.6100	26.0890	29.9850	43.7020
17	29.8280	31.0240	38.6100	28.4330	29.9850	43.7020
18	30.8060	34.9400	41.4240	28.6150	33.2000	46.7030
19	29.3480	30.6100	37.9780	27.2430	29.1030	42.8590

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B \* BASELINE TEST SERIES \*

MODE 5

UNIT	NREC CO EI LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
1	4.84	.75	17.29	17.72	15.89
2	6.69	-1.21	-18.24	18.77	8.55
3	5.91	.51	17.26	18.35	14.97
4	4.36	.45	17.46	17.96	12.75
5	5.94	.97	17.40	17.40	12.75
6	5.67	.67	17.07	17.07	8.05
7	4.21	.37	16.44	16.44	13.48
8	6.00	.51	16.52	16.74	11.22
9	5.01	.44	-14.64	-14.71	12.99
10	8.39	.62	-13.59	-13.59	8.55
11	6.72	.73	16.24	16.94	15.35
12	6.07	.78	15.61	17.06	16.11
13	5.70	.49	15.79	16.63	10.35
14	8.03	.84	16.01	17.46	-17.89
15	5.86	.49	17.38	18.53	9.80
16	5.80	.59	17.26	18.29	12.67
17	5.61	.47	16.79	18.14	8.78
18	7.00	.76	17.04	17.98	11.79
19	-14.24	.47	16.14	17.30	11.67

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 \* BASELINE TEST SERIES \*

MODE 6

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1	53.00	77.00	77.50	52.65	76.49	76.28
2	53.00	77.00	-77.00	52.65	76.49	76.49
3	54.50	77.00	78.00	54.24	76.63	77.63
4	55.00	76.00	78.00	54.74	75.64	77.63
5	55.00	79.00	79.00	54.68	78.55	-78.55
6	54.00	76.00	78.00	53.69	75.56	77.55
7	56.00	78.00	79.00	54.70	76.19	77.16
8	56.00	80.00	78.00	54.70	78.14	-76.19
9	54.00	78.00	78.25	52.74	76.19	-76.43
10	55.00	78.00	78.50	53.72	76.19	76.67
11	54.00	76.00	77.25	53.59	75.42	76.66
12	54.00	79.00	78.50	53.59	78.40	77.90
13	54.50	77.00	78.00	54.19	76.56	77.55
14	54.00	-81.00	78.00	53.69	-80.54	77.55
15	55.00	76.00	78.00	54.53	75.35	77.33
16	53.00	77.00	78.00	52.75	76.63	77.63
17	-52.00	76.00	78.00	-51.75	75.64	77.63
18	55.00	78.00	78.00	54.58	77.41	77.41
19	54.00	80.50	78.00	53.59	79.89	77.41

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • BASELINE TEST SERIES •

MODE 6

UNIT	FUEL FLOW LBM/HR	CB F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LRF
1	4075.	.9570	1.1820	1216.	-1.127	-10378.
2	4150.	.9150	1.1930	1216.	-1.129	10563.
3	4200.	.9640	1.2130	1207.	1.128	10495.
4	4000.	-.8900	1.1550	-1194.	1.128	10495.
5	4300.	.9420	1.2420	1221.	1.128	10467.
6	4200.	.9740	1.2130	1230.	1.128	10467.
7	4300.	-1.0210	1.2420	1257.	1.128	10530.
8	4200.	.9680	1.2130	-1266.	1.128	10530.
9	4100.	.9950	1.1840	1239.	1.128	10530.
10	4300.	-1.0280	1.2420	1243.	1.128	10530.
11	4200.	.9800	1.2130	1230.	1.128	10498.
12	4200.	.9860	1.2130	1225.	1.128	10498.
13	4150.	.9160	1.2040	1207.	-1.127	-10385.
14	-4700.	-1.1020	-1.3640	-1284.	-1.127	-10385.
15	4100.	.9360	1.1840	1212.	1.128	10467.
16	4100.	.9250	1.1950	1212.	-1.126	-10323.
17	4000.	.9760	1.1660	1212.	-1.126	-10323.
18	4000.	.9590	1.1550	1212.	1.128	10523.
19	4200.	1.0050	1.2130	1230.	1.128	10523.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RB211-22B \* BASELINE TEST SERIES \*

MODE 6

UNIT	CORR FU FL LBM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
1	4123.	.9440	1.1640	1200.	-10430.
2	4199.	.9020	1.1770	1200.	-10616.
3	4231.	.9550	1.2010	1196.	10523.
4	4030.	-.8820	1.1440	1182.	10523.
5	4348.	.9310	1.2270	1207.	10523.
6	4247.	.9630	1.1990	1216.	10523.
7	4399.	.9740	1.1850	1199.	10523.
8	4297.	.9230	1.1570	1208.	10523.
9	4195.	.9500	1.1290	1182.	10523.
10	4399.	.9800	1.1850	1186.	10523.
11	4242.	.9650	1.1940	1211.	10523.
12	4242.	.9710	1.1940	1207.	10523.
13	4192.	.9060	1.1900	1193.	-10430.
14	-4748.	-1.0900	-1.3480	-1269.	-10430.
15	4158.	.9200	1.1640	1191.	10523.
16	4125.	.9160	1.1840	1200.	-10337.
17	4025.	.9670	1.1550	1200.	-10337.
18	4031.	.9440	1.1370	1193.	10523.
19	4232.	.9890	1.1940	1211.	10523.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RB211-228 • BASELINE TEST SERIES •

MODE 6

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.980	198.9	36.7	36.7	48.5
2	1.844	253.6	38.3	39.4	52.0
3	1.995	227.7	35.4	38.0	51.4
4	-1.846	190.8	23.5	-49.5	50.7
5	1.949	228.7	41.6	35.9	47.9
6	2.014	235.7	50.5	43.1	-44.0
7	-2.128	171.9	-21.1	-47.5	54.7
8	2.010	194.6	28.1	-47.4	54.0
9	2.064	226.9	28.2	-43.9	53.5
10	-2.124	285.6	38.8	40.8	50.1
11	2.023	244.8	44.8	38.5	47.9
12	2.041	211.2	41.0	40.1	53.3
13	1.894	212.3	31.8	37.9	46.4
14	-2.278	268.9	48.7	41.5	56.6
15	1.930	230.8	42.0	39.4	51.1
16	1.908	238.0	40.7	37.0	50.3
17	2.014	251.1	45.2	34.8	50.7
18	1.977	228.0	44.9	41.5	50.9
19	2.062	-351.9	44.7	38.2	53.6

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-22B • BASELINE TEST SERIES •

MODE 6

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	3112.	19.90	6.31	6.04	7.97	9.93
2	3100.	26.55	6.90	6.77	8.95	4.64
3	3113.	22.61	6.04	6.19	8.44	7.24
4	3121.	20.53	4.34	-8.75	8.96	6.62
5	3113.	23.25	7.27	6.00	8.00	4.61
6	3110.	23.16	8.52	6.96	-7.11	-2.01
7	-3133.	-16.10	-3.39	7.32	8.42	5.26
8	-3124.	19.25	4.78	-7.71	8.78	5.30
9	3118.	21.81	4.66	6.93	8.45	7.22
10	3106.	26.59	6.20	6.24	7.66	7.22
11	3105.	23.91	7.52	6.18	7.68	-13.2
12	3112.	20.49	6.84	6.39	8.49	7.22
13	3110.	22.19	5.71	6.50	7.97	7.95
14	3104.	23.32	7.26	5.91	8.05	-14.57
15	3103.	23.62	7.38	6.62	8.59	6.62
16	3104.	24.64	7.23	6.30	8.55	9.33
17	3103.	24.62	7.62	5.60	8.17	4.00
18	3101.	22.75	7.69	6.80	8.34	6.58
19	-3085.	-33.52	7.32	5.98	8.39	5.88

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-229 • BASELINE TEST SERIES •

MODE 6

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	5.6190	6.5470	15.2030	5.3760	6.2410	16.4990
2	5.5190	6.5470	15.2030	5.2840	6.2410	16.4990
3	5.6640	6.6430	15.4250	5.4930	6.4300	16.8020
4	5.0900	5.8080	14.2150	4.9400	5.6230	15.4920
5	6.9520	9.6200	18.7520	6.6810	9.2060	21.0120
6	5.2880	5.8270	13.7350	5.0880	5.5840	15.4280
7	6.1160	6.7900	16.9190	5.2860	5.9260	15.9880
8	7.4490	9.9490	-21.5600	6.4230	8.6400	20.2140
9	6.0460	6.7900	17.1270	5.2320	5.9260	15.9880
10	6.1340	6.7900	17.1270	5.3000	5.9260	15.9880
11	5.3000	5.7790	14.0730	5.0520	5.5080	15.3010
12	7.0650	9.4760	19.1470	6.7200	9.0140	20.7500
13	5.5400	6.6010	14.6510	5.3360	6.3350	16.6500
14	-8.7320	-12.5890	-21.8670	-8.3750	-12.0590	-24.7720
15	5.2190	5.8010	13.7280	4.9390	5.4700	15.2180
16	5.5670	6.6270	14.7500	5.4040	6.4300	16.8020
17	5.2710	5.7940	13.5930	5.1160	5.6230	15.4920
18	6.2620	7.8500	16.2370	5.9740	7.5050	18.4890
19	7.9940	11.5930	20.6810	7.6080	11.0650	23.4900

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 \* BASELINE TEST SERIES \*

MODE 6

UNIT	NREC CO EI LB/KLA FU	NREC HC EI LB/KLA FU	NRE CNO EI LB/KLA FU	NR CNOX EI LB/KLA FU	SMK NUMBER CORRECTED
1	20.80	6.62	7.04	9.29	9.93
2	27.74	7.24	7.89	10.43	4.64
3	23.32	6.24	7.24	9.88	7.24
4	21.15	4.48	-10.25	10.49	6.62
5	24.19	7.59	7.22	9.63	4.61
6	24.07	8.89	7.81	-7.94	-2.01
7	19.63	-3.89	7.42	8.54	5.26
8	22.33	5.50	7.22	8.23	5.30
9	25.20	5.34	6.47	-7.89	7.33
10	-30.77	7.11	-5.82	-7.15	7.89
11	25.08	7.89	6.72	8.35	8.18
12	21.54	7.19	6.93	9.20	7.28
13	23.04	5.95	7.39	9.06	7.54
14	24.31	7.58	6.69	9.13	-14.57
15	24.96	7.83	7.35	9.53	6.62
16	25.38	7.45	7.17	9.74	9.33
17	25.37	7.85	6.38	9.31	4.00
18	23.85	8.05	7.74	9.50	6.58
19	-35.21	7.67	6.79	9.53	5.88

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

R8211-228 • BASELINE TEST SERIES •

MODE 7

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1	-28.00	50.50	66.25	-27.81	50.16	65.81
2	-29.00	-53.00	67.00	-28.81	-52.65	66.55
3	27.00	49.00	66.00	26.87	48.77	65.68
4	27.00	48.50	66.00	26.87	48.27	65.68
5	27.00	49.00	66.00	26.85	48.72	65.62
6	27.00	50.00	66.00	26.85	49.71	65.62
7	27.00	50.00	37.00	26.37	48.84	65.44
8	27.00	50.00	67.00	26.37	48.84	65.44
9	27.00	49.00	66.25	26.37	47.86	64.71
10	-29.00	-54.00	-68.00	-28.33	-52.74	66.42
11	-28.00	51.00	66.00	-27.79	50.61	65.50
12	-26.00	50.00	66.00	-25.80	49.62	65.50
13	27.00	49.00	65.25	26.85	48.72	64.88
14	27.00	50.00	66.00	26.85	49.71	65.62
15	27.50	50.00	66.00	27.26	49.57	65.43
16	27.00	50.00	67.00	26.87	49.76	66.68
17	27.00	49.00	66.00	26.87	48.77	65.68
18	-29.00	51.00	67.00	-28.78	50.61	66.49
19	-29.00	-52.00	-68.00	-28.78	-51.50	-67.48

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RR211-22B \* BASELINE TEST SERIES \*

MODE 7

UNIT	FUEL FLOW LBM/HR	CB F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LBF
1	1800.	.8140	.9800	1068.	1.035	3640.
2	-1900.	.7950	1.0180	1077.	-1.037	3944.
3	1600.	.8150	.8710	1059.	1.035	3616.
4	1600.	-.7500	.8710	1054.	1.031	3616.
5	1675.	.7990	.9120	1063.	1.031	3589.
6	1700.	.7950	.9260	1054.	1.032	3589.
7	1650.	.8450	.8990	-1104.	1.022	3563.
8	1750.	.7950	.9530	1086.	-1.020	3563.
9	-1900.	.8210	-1.0350	1077.	1.030	3367.
10	-2000.	-.8690	-1.0890	-1108.	1.031	3905.
11	1800.	.8410	.9800	1090.	1.032	3567.
12	1700.	.8110	.9260	1077.	1.025	3567.
13	1750.	.8070	.9530	1057.	1.028	3394.
14	1750.	.8250	.9530	1059.	1.025	3593.
15	1750.	.7900	.9530	1077.	1.030	3540.
16	-1900.	-.8980	-1.0350	-1122.	1.025	-4017.
17	1800.	.8430	.9800	1086.	1.035	3621.
18	1750.	.8380	.9530	1086.	1.030	3935.
19	1800.	-.8590	.9800	1059.	1.032	-4392.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 • BASELINE TEST SERIES •

MODE 7

UNIT	CORR FU FL LBM/HR	COR CB F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
1	1821.	.8040	.9670	1053.	3658.
2	-1922.	.7840	1.0050	1062.	3964.
3	1612.	.8080	.8630	1049.	3625.
4	1612.	-.7430	.8630	1044.	3425.
5	1694.	.7900	.9020	1051.	3609.
6	1719.	.7860	.9150	1042.	3609.
7	1688.	.8070	.8570	1053.	3560.
8	1790.	.7590	.9090	1036.	3560.
9	-1944.	.7830	.9870	-1027.	3364.
10	-2046.	.8290	-1.0390	1057.	3902.
11	1818.	.8280	.9660	1074.	3575.
12	1717.	.7980	.9120	1060.	3575.
13	1768.	.7980	.9420	1045.	3409.
14	1768.	.8160	.9420	1047.	3609.
15	1775.	.7770	.9370	1058.	3559.
16	-1912.	-.8890	-1.0250	-1111.	-4023.
17	1811.	.8350	.9710	1075.	3625.
18	1763.	.8250	.9390	1069.	3935.
19	1814.	-.8560	.9460	1043.	-4392.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • BASELINE TEST SERIES •

MODE 7

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.529	744.1	341.8	7.2	14.9
2	1.502	736.3	299.2	8.3	16.0
3	1.515	787.5	387.6	6.0	13.5
4	-1.385	832.2	345.0	7.2	13.6
5	1.473	839.1	406.3	7.5	-12.3
6	1.481	770.9	374.5	8.6	13.4
7	-1.625	712.8	-265.8	6.5	14.8
8	1.500	739.7	317.6	7.0	13.7
9	1.541	811.7	335.2	6.9	13.8
10	-1.669	734.2	-272.9	-9.6	16.5
11	1.593	739.1	323.4	9.0	16.1
12	1.506	786.7	380.0	6.3	14.2
13	1.506	789.7	351.0	7.6	13.8
14	1.539	757.4	378.2	6.1	14.6
15	1.474	753.2	353.3	5.9	14.0
16	-1.708	796.9	316.5	9.5	-17.9
17	1.567	807.3	396.8	6.9	15.5
18	1.563	739.0	392.3	8.4	15.2
19	-1.629	841.6	357.1	8.4	-17.5

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

R8211-22B \* BASELINE TEST SERIES \*

MODE 7

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMRER FRONT SIDE
1	2833.	87.72	69.23	1.39	2.88	0.00
2	2850.	88.94	62.08	1.65	3.17	0.00
3	2804.	92.76	78.43	1.16	2.61	0.00
4	2789.	-106.64	75.94	1.51	2.86	0.00
5	2781.	100.85	83.89	1.49	-2.43	0.00
6	2810.	93.10	77.69	1.70	2.65	0.00
7	-2898.	-80.91	-51.84	1.22	2.77	0.00
8	2846.	89.35	65.91	1.39	2.71	0.00
9	2831.	94.93	67.35	1.33	2.64	0.00
10	-2896.	-81.05	-51.76	1.74	2.99	0.00
11	2856.	84.34	63.40	1.69	3.02	0.00
12	2804.	93.21	77.34	1.23	2.76	0.00
13	2815.	94.00	71.78	1.48	2.70	0.00
14	2814.	88.15	75.63	1.16	2.79	0.00
15	2814.	91.53	73.75	1.17	2.79	0.00
16	-2868.	85.18	-58.49	1.66	3.14	0.00
17	2805.	92.00	77.66	1.30	2.91	0.00
18	2813.	84.68	77.21	1.57	2.87	0.00
19	2826.	92.93	67.73	1.53	3.18	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

R8211-22B \* BASELINE TEST SERIES \*

MODE 7

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	1.7110	.8800	4.5550	1.6510	.8440	4.9970
2	-1.8970	-1.0680	-5.1090	-1.8300	-1.0250	-5.6000
3	1.5900	.7740	4.2620	1.5520	.7530	4.6810
4	1.5230	.7430	4.1620	1.4870	.7230	4.5720
5	1.5890	.7790	4.1200	1.5400	.7510	4.6710
6	1.6600	.8450	4.3180	1.6090	.8140	4.8940
7	1.7430	.8480	4.7760	1.5560	.7580	4.6970
8	1.7150	.8480	4.7760	1.5340	.7580	4.6970
9	1.6510	.7800	4.6100	1.4770	.6980	4.4850
10	-2.0970	-1.1590	-5.8240	-1.8640	-1.0320	-5.6250
11	1.7650	.9120	4.6390	1.6980	.8750	5.1020
12	1.6710	.8420	4.4280	1.6090	.8080	4.8720
13	1.5910	.7770	4.0690	1.5440	.7510	4.6710
14	1.6750	.8430	4.2650	1.6240	.8140	4.8940
15	1.6670	.8470	4.3210	1.5950	.8050	4.8620
16	1.7070	.8380	4.2710	1.6660	.8170	4.9050
17	1.6030	.7730	4.0750	1.5650	.7530	4.6810
18	1.7600	.9080	4.4210	1.6960	.8750	5.1020
19	-1.8580	-.9820	4.6290	-1.7900	-.9460	-5.3400

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RB211-22B • BASELINE TEST SERIES •

MODE 7

JNIT	NREC CO EI LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
1	90.92	72.14	1.64	3.39	0.00
2	92.22	64.73	1.94	3.73	0.00
3	95.07	80.62	1.37	3.08	0.00
4	-109.24	78.05	1.79	3.38	0.00
5	104.03	87.04	1.81	2.96	0.00
6	96.05	80.62	-2.07	3.22	0.00
7	90.62	-57.98	1.28	2.92	0.00
8	99.90	73.71	1.37	-2.67	0.00
9	-106.14	75.25	1.29	-2.57	0.00
10	91.17	-58.09	1.68	2.89	0.00
11	87.68	66.05	1.85	3.32	0.00
12	96.84	80.55	1.36	3.04	0.00
13	96.89	74.34	1.70	3.10	0.00
14	90.90	78.34	1.33	3.20	0.00
15	95.71	77.58	1.32	3.14	0.00
16	87.28	-59.99	1.91	3.61	0.00
17	94.22	79.65	1.49	3.34	0.00
18	87.87	80.11	1.82	3.31	0.00
19	96.49	70.30	1.76	3.67	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-22R • BASELINE TEST SERIES •

MODE 8

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1	24.00	45.50	63.00	23.84	45.20	62.58
2	-26.00	-48.00	-65.00	-25.83	-47.68	-64.57
3	23.00	42.50	62.00	22.89	42.30	61.70
4	23.00	44.00	63.00	22.59	43.79	62.70
5	25.00	45.00	64.00	24.86	44.74	63.63
6	24.00	44.00	63.00	23.86	43.75	62.64
7	25.00	-47.00	-65.00	24.42	45.91	63.49
8	25.00	-47.00	-65.00	24.42	45.91	63.49
9	24.00	45.00	64.00	23.44	43.95	62.51
10	25.00	-48.00	-64.75	24.42	-46.88	63.24
11	24.00	46.00	63.00	23.82	45.65	62.52
12	23.00	45.00	62.50	22.82	44.66	62.02
13	23.50	44.00	62.25	23.37	43.75	61.89
14	22.50	44.00	62.50	22.37	43.75	62.14
15	22.00	-40.00	-60.00	21.81	-39.66	-59.49
16	23.00	44.00	62.00	22.89	43.79	61.71
17	22.00	-42.00	61.00	21.89	-41.80	60.71
18	25.00	-47.00	64.00	24.81	-46.64	63.51
19	25.00	-47.00	64.00	24.81	-46.64	63.51

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

R8211-228 • BASELINE TEST SERIES •

MODE 8

UNIT	FUEL FLOW LBM/HR	CB F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LAF
1	1588.	.8110	.8650	1036.	1.025	2802.
2	1600.	.7880	.8710	1050.	1.030	-3309.
3	1400.	.8100	.7630	1032.	1.030	2634.
4	1400.	-.7390	.7530	1027.	1.029	2832.
5	1600.	.8030	.8710	1032.	1.029	3060.
6	1500.	.7910	.8170	1050.	1.030	2813.
7	1586.	.8110	.8640	-1086.	1.018	3039.
8	1580.	.8080	.8610	1068.	1.016	3039.
9	-1700.	.8160	-.9260	1050.	1.025	2804.
10	-1700.	.8550	-.9260	1077.	1.020	2974.
11	1600.	.8310	.8710	1063.	1.025	2797.
12	1500.	.8110	.8170	1050.	1.020	2698.
13	1500.	.8110	.8170	1036.	1.022	2667.
14	1500.	.8140	.8170	1023.	1.015	2717.
15	1500.	.7950	.8170	1041.	-1.010	-2211.
16	1600.	-.9320	.8710	-1122.	1.026	2637.
17	1500.	.8480	.8170	1050.	1.025	2438.
18	1600.	.8440	.8710	1068.	1.025	3044.
19	1600.	.8670	.8710	1050.	1.022	3044.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 \* BASELINE TEST SERIES \*

MODE 8

UNIT	CORR FU FL LBM/HR	COR CR F/A X100	COR PF F/A X100	COR TT7 DEG R	COR THRUST LBF
1	1606.	.8000	.8530	1022.	2816.
2	1619.	.7770	.8600	1036.	-3326.
3	1410.	.8020	.7550	1022.	2641.
4	1410.	-.7320	.7550	1017.	2840.
5	1618.	.7940	.8610	1020.	-3076.
6	1517.	.7820	.8080	1038.	2828.
7	1623.	.7740	.8240	1036.	3037.
8	1617.	.7710	.8210	1019.	3037.
9	-1739.	.7790	.8830	-1001.	2802.
10	-1739.	.8160	.8830	1027.	2972.
11	1616.	.8180	.8580	1047.	2804.
12	1515.	.7990	.8050	1034.	2705.
13	1515.	.8010	.8080	1024.	2679.
14	1515.	.8040	.8080	1011.	2728.
15	1521.	.7810	.8030	1023.	-2223.
16	1510.	-.9230	.8630	-1111.	2641.
17	1509.	.8400	.8090	1040.	2442.
18	1612.	.8310	.8580	1051.	3044.
19	1612.	-.8540	.8580	1034.	3044.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RB211-228 • BASELINE TEST SERIES •

MODE 8

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.474	855.4	461.7	5.8	12.5
2	1.455	-826.8	-371.0	6.6	13.6
3	1.447	937.9	523.7	5.1	11.1
4	-1.316	953.2	457.2	5.5	11.5
5	1.446	913.1	495.6	7.0	10.8
6	1.421	901.5	498.6	6.9	10.9
7	1.532	-767.0	-316.5	5.9	13.8
8	1.506	-794.2	-367.9	6.0	12.8
9	1.496	890.9	420.0	5.4	11.7
10	-1.593	858.8	-384.8	7.0	13.4
11	1.525	841.2	439.8	7.0	12.4
12	1.458	911.9	502.2	5.4	12.2
13	1.469	901.2	461.7	5.6	11.8
14	1.468	885.5	488.0	5.9	11.9
15	1.412	935.0	527.2	-4.1	10.8
16	-1.717	953.4	474.2	7.2	-14.3
17	1.507	-991.7	-569.9	4.9	12.1
18	1.539	-818.0	485.2	7.0	13.3
19	1.576	956.2	475.5	6.9	-14.4

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RD211-228 • BASELINE TEST SERIES •

MODE 8

UNIT	CO2 FI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO FI LB/KLB FU	NOX EI LB/KLB FU	SHR NUMBER FRONT SIDE
1	2744.	101.31	93.94	1.12	2.43	0.00
2	-2782.	100.84	-77.75	1.33	-2.73	0.00
3	2697.	111.27	106.74	.99	2.16	0.00
4	2690.	-124.00	102.18	1.18	2.45	0.00
5	2718.	109.25	101.87	1.39	2.13	0.00
6	2712.	109.50	104.04	1.37	2.17	0.00
7	-2848.	-90.77	-64.35	1.14	-2.68	0.00
8	-2813.	-94.43	-75.15	1.17	2.50	0.00
9	2767.	104.87	-84.93	1.04	2.27	0.00
10	-2810.	-96.43	-74.24	1.29	2.46	0.00
11	2770.	-97.26	87.35	1.33	2.55	0.00
12	2713.	108.01	102.20	1.05	2.37	0.00
13	2735.	106.80	94.00	1.09	2.29	0.00
14	2725.	104.57	99.00	1.13	2.31	0.00
15	2682.	113.05	109.50	-.81	2.14	0.00
16	-2778.	98.20	-83.91	1.21	2.42	0.00
17	2682.	112.33	110.90	.91	2.24	0.00
18	2752.	-93.09	94.86	1.30	2.48	0.00
19	2744.	105.91	90.48	1.26	2.62	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 • BASELINE TEST SERIES •

MODE 8

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	1.3510	.5740	3.5790	1.3050	.5520	3.9340
2	-1.5140	-.7160	-4.0480	-1.4620	-.6880	-4.4460
3	1.1340	.4210	3.0280	1.1080	.4100	3.3330
4	1.2110	.4920	3.3030	1.1830	.4790	3.6330
5	1.3090	.5470	3.3780	1.2700	.5280	3.8350
6	1.2340	.4950	3.1910	1.1980	.4770	3.6250
7	-1.4980	-.6580	-4.1320	1.3420	.5890	4.0810
8	-1.4960	-.6580	-4.1320	1.3410	.5890	4.0810
9	1.3480	.5430	-3.7460	1.2100	.4870	3.6670
10	-1.5930	-.7170	-4.3930	-1.4250	-.6420	-4.2790
11	1.3940	.5990	3.6560	1.3430	.5760	4.0300
12	1.3140	.5440	3.4610	1.2660	.5230	3.8170
13	1.2400	.4940	3.1520	1.2040	.4770	3.6250
14	1.2410	.4940	3.1520	1.2050	.4770	3.6250
15	-.9780	-.3200	-2.5150	-.9390	-.3050	-2.8460
16	1.2820	.4910	3.1580	1.2520	.4790	3.6330
17	1.1130	.3980	2.8110	1.0880	.3890	-3.2370
18	-1.4670	-.6520	3.6580	-1.4150	-.6290	-4.2300
19	-1.4770	-.6520	3.6580	-1.4250	-.6290	-4.2300

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

R8211-22R \* BASELINE TEST SERIES \*

MODE 8

UNIT	NREC CO E: LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
1	104.86	97.76	1.32	2.87	0.00
2	104.43	-80.96	1.57	-3.22	0.00
3	113.89	109.57	1.17	2.56	0.00
4	-126.91	104.93	1.39	2.90	0.00
5	112.60	105.59	-1.69	2.59	0.00
6	112.82	107.82	-1.67	2.65	0.00
7	-101.27	-71.78	1.21	2.84	0.00
8	105.35	-83.83	1.16	2.47	0.00
9	116.79	94.54	1.01	-2.22	0.00
10	107.84	-82.88	1.26	2.40	0.00
11	-100.95	90.88	1.46	2.81	0.00
12	112.04	106.29	1.15	2.61	0.00
13	109.96	97.24	1.25	2.64	0.00
14	107.67	102.41	1.31	2.66	0.00
15	117.81	114.77	-0.91	2.42	0.00
16	-100.52	-85.96	1.39	2.79	0.00
17	114.88	113.56	1.05	2.58	0.00
18	-96.49	98.31	1.51	2.87	0.00
19	109.81	93.77	1.46	3.03	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22A • 150 HOUR TEST SERIES •

UNIT	TSO HR	TSB HR	AMB TEMP DEG R	AMB PRESS IN HG	AMB HUMID LR H2O/AIR
1	2480.	186.	538.7	29.80	.008670
3	3150.	132.	521.7	29.99	.008140
4	5230.	133.	521.7	29.90	.008170
7	4617.	212.	527.7	29.95	.011130
8	1432.	211.	527.7	29.95	.011130
13	3057.	168.	523.7	30.10	.008830
14	1543.	168.	523.7	30.10	.008830
15	2525.	115.	527.7	30.05	.011090
16	3558.	186.	529.7	30.00	.009990
17	6482.	187.	529.7	30.00	.009990

RB211-228 • 150 HOUR TEST SERIES •

MODE 1

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1	25.00	46.00	64.00	24.53	45.14	62.80
3	23.00	44.00	61.50	22.93	43.87	61.32
4	23.00	45.00	62.00	22.93	44.87	61.02
7	24.00	45.00	62.00	23.79	44.61	61.47
8	23.00	45.00	62.00	22.80	44.61	61.47
13	24.00	46.00	63.00	23.89	45.78	62.70
14	23.00	44.00	64.00	22.89	43.79	63.69
15	23.00	-42.00	61.50	22.80	-41.64	60.97
16	23.50	44.50	62.00	23.25	44.04	61.35
17	22.00	-42.00	61.00	21.77	-41.56	-60.36

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



R8211-228 • 150 HOUR TEST SERIES •

MODE 1

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LAF
1	1600.	.8320	.8710	1077.	1.026	2872.
3	1500.	.8320	.8170	1032.	1.012	2559.
4	1500.	.8080	.8170	1050.	1.018	2666.
7	1550.	.8090	.8440	1050.	1.025	2591.
8	1500.	.8310	.8170	1041.	1.028	2591.
13	1600.	-.9770	.8710	1050.	1.020	2823.
14	1600.	.8660	.8710	1032.	1.020	3074.
15	1500.	.8840	.8170	1068.	1.020	2484.
16	-1400.	.8320	-.7630	1032.	1.026	2564.
17	1500.	.8630	.8170	1068.	1.024	2366.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 150 HOUR TEST SERIES •

MODE 1

UNIT	CORR FU FL LRM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LRF
1	1624.	.8010	.8370	1037.	2860.
3	1508.	.8270	.8120	1026.	2565.
4	1503.	.8040	.8120	1044.	2664.
7	1565.	.7950	.8300	1032.	2594.
8	1514.	.8170	.8030	1023.	2594.
13	1617.	-.9680	.8630	1040.	2840.
14	1617.	.8570	.8630	1022.	-3093.
15	1520.	.8680	.8030	1049.	2495.
16	-1419.	.8140	-.7470	1010.	2571.
17	1520.	.8450	.8000	1046.	2373.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 150 HOUR TEST SERIES •

MODE 1

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.545	790.5	393.2	7.2	13.2
3	1.478	894.1	571.9	6.5	11.1
4	1.468	874.3	450.7	6.8	11.9
7	1.480	835.9	428.6	4.7	7.9
8	1.512	847.6	474.0	5.2	9.9
13	-1.847	803.2	393.3	8.5	14.1
14	1.579	853.4	484.2	8.7	10.6
15	1.625	861.5	469.1	5.4	10.9
16	1.518	872.4	461.0	5.1	11.4
17	1.567	891.5	509.8	6.7	10.4

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-22B • 150 HOUR TEST SERIES •

MODE 1

UNIT	CO2 FI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO FI LB/KLB FU	NOX EI LB/KLB FU	SMK NIIMMER FRONT SIDE
1	2801.	91.22	77.94	1.36	2.50	0.00
3	-2684.	103.34	113.56	1.24	2.10	0.00
4	2742.	103.93	92.04	1.34	2.32	0.00
7	2762.	99.31	87.49	.91	1.55	0.00
8	2746.	97.98	94.14	.90	1.89	0.00
13	-2848.	-78.81	-66.71	1.37	2.27	0.00
14	2752.	94.66	92.26	1.59	1.94	0.00
15	2775.	93.62	87.57	.97	1.95	0.00
16	2756.	100.76	91.47	.97	2.16	0.00
17	2742.	99.27	97.52	1.22	1.91	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 \* 150 HOUR TEST SERIES \*

MODE 1

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	1.4170	.5950	3.7170	1.3010	.5490	3.9220
3	1.2400	.4920	3.1840	1.2220	.4840	3.6510
4	1.2990	.5410	3.3630	1.2330	.5350	3.8630
7	1.3130	.5430	3.2430	1.2620	.5210	3.8080
8	1.3220	.5430	3.2430	1.2700	.5210	3.8080
13	1.4560	.6020	3.5400	1.4160	.5830	4.0560
14	1.2600	.4950	3.1680	1.2270	.4790	3.6330
15	-1.1340	-.4000	-2.7320	-1.0870	-.3820	-3.2060
16	1.2920	.5180	3.2450	1.2290	.4920	3.6850
17	-1.1280	-.3990	2.8050	-1.0740	-.3790	-3.1920

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RB211-22B • 150 HOUR TEST SERIES •

MODE 1

UNIT	NREC CO FI LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO FI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMFR CORRECTED
1	99.32	84.49	1.44	2.64	0.00
3	104.88	115.54	1.42	2.41	0.00
4	105.25	93.15	1.53	2.67	0.00
7	103.37	91.17	1.07	1.82	0.00
8	102.01	98.10	1.16	2.22	0.00
13	-81.02	-68.53	1.57	2.60	0.00
14	97.20	95.31	1.82	2.22	0.00
15	97.66	91.70	1.14	2.28	0.00
16	105.94	96.42	1.10	2.45	0.00
17	104.28	102.67	1.39	2.17	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 • 150 HOUR TEST SERIES •

MODE 2

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1	-28.00	51.00	67.00	27.48	50.04	65.74
3	27.00	50.00	66.00	26.92	49.86	65.81
4	27.00	50.00	66.00	26.92	49.86	65.81
7	27.00	50.00	66.00	26.77	49.57	65.43
8	27.00	50.00	66.00	26.77	49.57	65.43
13	27.00	50.00	66.00	26.87	49.76	65.68
14	27.00	51.00	67.00	26.87	50.76	66.68
15	27.00	-48.00	65.00	26.77	-47.59	64.44
16	27.00	50.00	66.00	26.72	49.48	65.31
17	27.00	51.00	66.00	26.72	50.47	65.31

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 150 HOUR TEST SERIES •

MODE 2

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LBF
1	1800.	.8470	.9800	-1104.	1.032	3656.
3	1800.	.8270	.9800	1068.	1.022	3651.
4	1700.	.8150	.9260	1068.	1.026	3662.
7	1800.	.8210	.9800	1068.	1.030	3555.
8	1800.	.9340	.9800	1068.	1.029	3555.
13	1800.	.8460	.9800	1068.	1.028	3604.
14	1800.	.8780	.9800	1066.	1.028	-3998.
15	1800.	.8540	.9800	1086.	1.028	3279.
16	1700.	.8390	.9260	1068.	1.034	3516.
17	1800.	.8640	.9800	1086.	1.036	3516.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 \* 150 HOUR TEST SERIES \*

MODE 2

UNIT	CORR FU FL LBM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
1	1827.	.8160	.9440	1063.	3642.
3	1809.	.8220	.9750	1052.	3659.
4	1704.	.8100	.9210	1062.	3659.
7	1817.	.8070	.9640	1049.	3559.
8	1817.	.8200	.9640	1049.	3559.
13	1820.	.6380	.9710	1054.	3625.
14	1820.	.8690	.9710	1056.	-4023.
15	1823.	.8490	.9640	1067.	3293.
16	1723.	.8220	.9070	1046.	3526.
17	1824.	.8450	.9600	1063.	3526.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 • 150 HOUR TEST SERIES •

MODE 2

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.621	667.0	289.9	6.1	-17.8
3	1.537	724.2	405.4	5.6	15.0
4	1.538	724.3	318.3	6.5	15.2
7	1.548	716.4	327.7	4.2	11.7
8	1.563	734.0	367.5	5.3	12.3
13	1.594	727.4	345.1	6.8	15.0
14	1.651	717.2	375.4	7.5	15.7
15	1.617	709.9	410.2	7.1	13.3
16	1.593	718.6	330.1	5.2	14.4
17	1.656	-646.7	309.3	6.7	15.0

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



**UNCLASSIFIED**

**NREC-1238-12**

**FAA-RD-78-56-7**

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The image displays a microfiche card with a 4x12 grid of frames. Each frame contains a small table of data, likely a calendar or schedule, with columns for dates and possibly names or events. The text is very small and difficult to read, but the layout is consistent across all frames.

RA211-22R • 150 HOUR TEST SERIES •

MODE 2

UNIT	CO2 EI LB/KLA FU	CO EI LA/KLA FU	HC EI LA/KLA FU	NO FI LA/KLA FU	NOX EI LA/KLA FU	SMK WIMAER FRONT SIDE
1	-2985.	75.56	-56.41	1.14	-3.31	0.00
3	2904.	84.11	80.89	1.06	2.85	0.00
4	2847.	85.35	64.43	1.25	2.94	0.00
7	2946.	83.82	65.86	.80	2.24	0.00
8	2926.	84.48	72.66	1.00	2.33	0.00
13	2940.	82.49	67.23	1.27	2.79	0.00
14	2937.	78.42	70.51	1.34	2.83	0.00
15	2924.	78.89	78.30	1.29	2.42	0.00
16	2958.	82.22	64.90	.97	2.71	0.00
17	-2990.	-71.85	59.03	1.22	2.74	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 150 HOUR TEST SERIES •

MODE 2

UNIT	FCO X100	FMC X100	FNO X100	STD FCO X100	STD FMC X100	STD FNO X100
1	1.8020	.9100	4.7380	1.6490	.8360	4.9700
3	1.6640	.8390	4.3010	1.6380	.8240	4.9260
4	1.6530	.8340	4.2920	1.6320	.8240	4.9260
7	1.6780	.8400	4.1520	1.6090	.8050	4.8620
8	1.6850	.8400	4.1520	1.6160	.8050	4.8620
13	1.6850	.8450	4.2850	1.6390	.8170	4.9050
14	1.7800	.9160	4.4890	1.7310	.8850	5.1360
15	1.5560	-.7160	-3.7860	1.4880	-.6830	-4.4270
16	1.6970	.8440	4.2780	1.6100	.7990	4.8400
17	1.7890	.9140	4.4830	1.6960	.8650	5.0680

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 • 150 HOUR TEST SERIES •

MODE 2

UNIT	NREC CO EI LB/KLB FU	NREC MC EI LB/KLB FU	NRF CNO FI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMAFA CORRECTED
1	82.60	61.37	1.20	3.48	0.00
3	85.42	82.36	1.22	3.27	0.00
4	86.47	65.24	1.43	3.38	0.00
7	87.40	68.74	.94	2.63	0.00
8	88.10	75.84	1.17	2.72	0.00
13	84.79	69.53	1.46	3.19	0.00
14	80.64	72.94	1.53	3.23	0.00
15	82.45	82.17	1.51	2.83	0.00
16	86.65	68.56	1.10	3.07	0.00
17	-75.78	62.39	1.38	3.10	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

R8211-22B • 150 HOUR TEST SERIES •

MODE 3

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1	-95.00	99.00	93.40	93.22	97.14	91.65
3	94.00	96.00	93.00	93.73	95.72	92.73
4	93.50	96.00	92.50	93.23	95.72	92.23
7	93.00	97.00	92.00	92.20	96.17	91.21
8	93.00	97.00	92.00	92.20	96.17	91.21
13	93.00	97.50	93.00	92.55	97.03	92.55
14	93.50	97.00	93.00	93.05	96.54	92.55
15	93.00	-92.00	92.00	92.20	-91.21	91.21
16	94.00	98.00	92.00	93.02	96.98	91.04
17	93.00	-100.00	93.00	92.03	-98.96	92.03

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RB211-22B • 150 HOUR TEST SERIES •

MODE 3

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LBF
1	15000.	1.9170	2.1080	-1806.	1.533	42169.
3	15000.	1.8170	2.0010	1716.	1.533	41902.
4	15000.	1.7700	2.0010	1734.	1.533	42028.
7	15500.	1.7450	2.0680	1716.	1.533	41958.
8	15500.	1.8030	2.0680	1734.	1.533	41958.
13	15005.	1.8090	2.0020	1716.	1.533	41749.
14	15500.	1.8430	2.0680	1747.	1.533	41749.
15	15000.	1.8300	2.0250	1725.	-1.521	-40940.
16	16000.	1.8200	2.1350	1752.	1.533	41888.
17	16000.	1.8600	2.1350	1761.	1.533	41888.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B \* 150 HOUR TEST SERIES \*

MODE 3

UNIT	CORR FU FL LBM/HR	COR CB F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
1	16037.	1.8460	2.0300	1739.	42000.
3	15079.	1.8060	1.9900	1706.	42000.
4	15033.	1.7600	1.9900	1724.	42000.
7	15650.	-1.7150	2.0330	1686.	42000.
8	15650.	1.7720	2.0330	1704.	42000.
13	15168.	1.7920	1.9830	1699.	42000.
14	15668.	1.8260	2.0480	1731.	42000.
15	15195.	1.7980	1.9900	1695.	-41118.
16	16212.	1.7830	2.0900	1715.	42000.
17	16212.	1.8220	2.0900	1724.	42000.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 • 150 HOUR TEST SERIES •

MODE 3

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	4.062	21.7	3.4	-503.9	-503.1
3	3.844	27.6	8.0	399.3	408.4
4	3.744	19.0	-9.3	393.2	417.5
7	3.690	24.6	3.7	-342.6	-337.4
8	3.816	24.8	3.2	376.7	383.6
13	3.825	17.9	4.4	380.4	383.1
14	3.896	33.3	4.7	365.1	385.8
15	3.877	27.5	6.2	391.2	394.1
16	3.860	22.9	6.2	413.8	422.8
17	3.947	24.1	4.0	425.2	441.9

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 \* 150 HOUR TEST SERIES \*

MODE 3

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMAER FRONT SIDE
1	3156.	1.07	.29	-40.93	-40.93	27.81
3	3154.	1.44	.71	34.25	35.03	25.17
4	3154.	1.02	-.85	34.63	36.77	27.15
7	3155.	1.34	.34	30.62	30.62	29.14
8	3155.	1.31	.29	32.57	33.17	27.81
13	3151.	.94	.39	32.76	32.99	33.33
14	3150.	1.72	.42	30.86	32.60	30.00
15	3159.	1.42	.55	33.32	33.56	30.20
16	3162.	1.19	.56	35.43	36.21	28.86
17	3162.	1.23	.35	35.61	37.01	30.67

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 • 150 HOUR TEST SERIES •

MODE 3

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	-137.6580	113.9860	-102.7040	105.2630	99.7470	99.3780
3	90.8670	84.7330	76.8620	87.3720	82.6410	87.0240
4	-85.8490	84.2750	76.7040	82.8060	82.6410	87.0240
7	92.0190	93.7170	80.4680	82.3140	87.8640	90.9420
8	98.5560	93.7170	80.4680	87.8640	87.8640	90.9420
13	104.9090	103.4230	87.9870	97.9630	98.7730	98.6930
14	104.9330	96.6990	83.9190	97.0740	92.3710	94.1620
15	-61.4210	-47.2130	-49.7810	-54.9400	-44.1650	-56.4690
16	111.2680	106.4240	90.7260	96.3260	98.0310	98.1710
17	118.5130	108.3000	91.8600	102.2600	99.7470	99.3780

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RB211-228 • 150 HOUR TEST SERIES •

MODE 3

UNIT	NREC CO EI LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
1	1.40	.33	39.61	39.61	20.78
3	1.50	.73	38.78	39.66	22.74
4	1.06	-.87	39.29	41.72	22.59
7	1.49	.37	34.61	34.61	24.44
8	1.47	.31	36.81	37.48	20.63
13	1.01	.41	36.75	37.00	-33.33
14	1.84	.44	34.62	36.58	28.67
15	1.59	.59	37.80	38.07	23.82
16	1.38	.60	38.34	39.18	23.66
17	1.42	.38	38.53	40.04	25.50

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22B \* 150 HOUR TEST SERIES \*

MODF 4

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1	89.00	95.00	-92.00	87.33	93.22	90.28
3	88.00	94.00	91.00	87.75	93.73	90.74
4	88.00	94.00	90.00	87.75	93.73	89.74
7	88.00	94.00	90.00	87.25	93.19	89.23
8	88.00	94.00	90.00	87.25	93.19	89.23
13	88.00	95.00	91.00	87.58	94.55	90.56
14	87.00	94.50	91.00	86.58	94.05	90.56
15	88.00	94.00	90.00	87.25	93.19	89.23
16	87.50	95.00	90.00	86.59	94.01	89.06
17	87.50	95.00	-92.00	86.59	95.00	-91.04

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 • 150 HOUR TEST SERIES •

MODE 4

UNIT	FUEL FLOW LBM/HR	CB F/A X100	PERF F/A X100	TTT DEG R	EPR	THRUST LAF
1	12500.	1.7000	1.8330	-1689.	1.446	35757.
3	13000.	1.6410	1.9060	1644.	1.446	35530.
4	12500.	1.5860	1.8330	1635.	1.446	35637.
7	13000.	1.5730	1.9060	-1599.	1.446	35578.
8	13000.	1.5820	1.9060	1608.	1.446	35578.
13	12500.	1.5940	1.8330	1614.	1.446	35400.
14	13000.	1.6260	1.9060	1626.	1.446	35400.
15	13000.	1.6680	1.9290	1644.	-1.436	-34779.
16	13000.	1.6070	1.9060	1644.	1.446	35518.
17	13000.	1.7030	1.9060	1680.	1.446	35518.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

PR211-22R • 150 HOUR TEST SERIES •

MODE 4

UNIT	CORR FU FL LRM/HR	COR CR F/A X100	COR PF F/A X100	COR TT7 DEG R	COR THRUST LRF
1	12688.	1.6370	-1.7650	1626.	35613.
3	13068.	1.6320	1.8950	1636.	35613.
4	12528.	1.5760	1.8220	1625.	35613.
7	13125.	1.5470	1.8740	-1571.	35613.
8	13125.	1.5550	1.8740	-1580.	35613.
13	12636.	1.5790	1.8150	1599.	35613.
14	13141.	1.6100	1.8880	1610.	35613.
15	13169.	1.6400	1.8960	1616.	-34930.
16	13172.	1.5740	1.8660	1610.	35613.
17	13172.	1.6580	1.8660	1645.	35613.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 150 HOUR TEST SERIES •

MODE 4

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	3.595	27.4	2.1	-345.4	-349.3
3	3.466	37.1	4.7	277.5	288.7
4	3.347	24.2	-7.6	271.4	287.4
7	3.322	31.5	1.8	245.3	246.5
8	3.339	44.8	1.9	254.2	265.7
13	3.362	26.7	2.2	251.7	-228.6
14	3.428	50.4	2.7	244.6	263.7
15	3.529	36.5	3.6	299.9	308.0
16	3.401	29.7	2.4	290.7	302.9
17	3.608	32.1	2.6	315.6	-333.4

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



R9211-228 • 150 HOUR TEST SERIES •

MODE 4

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	3155.	1.53	.20	-31.70	-32.05	20.00
3	3154.	2.15	.46	26.39	27.46	19.74
4	3154.	1.45	-.78	26.74	28.32	17.76
7	3155.	1.90	.18	24.35	24.47	18.67
8	3153.	2.69	.20	25.09	26.23	19.33
13	3150.	1.59	.23	24.66	24.66	18.00
14	-3148.	2.95	.27	23.49	25.32	20.81
15	3159.	2.08	.35	28.06	28.82	-8.00
16	3162.	1.76	.25	28.26	29.44	16.56
17	3162.	1.79	.25	28.92	-30.54	23.17

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 150 HOUR TEST SERIES •

MODE 4

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	71.0930	66.6940	70.0620	56.6380	58.7480	68.5280
3	61.3100	64.5420	63.4670	59.1900	62.9800	71.9190
4	57.7520	64.1940	63.3370	55.9310	62.9800	71.9190
7	56.9160	62.3060	60.2680	51.5790	58.5480	68.3670
8	57.4340	62.3060	60.2680	52.0270	58.5480	68.3670
13	64.3890	73.6240	69.1370	60.6350	70.3890	77.6840
14	63.4140	68.7760	65.9390	59.6860	65.7670	74.1170
15	62.9730	62.6810	60.4160	56.6600	58.5480	68.3670
16	64.9060	70.8150	67.9310	57.2950	65.4120	73.8410
17	-79.3430	-81.0590	74.6820	-69.5040	74.8070	81.0580

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22B • 150 HOUR TEST SERIES •

MODE 4

UNIT	NREC CO EI LB/KLB FU	NREC MC EI LA/KLB FU	NRE CNO EI LA/KLB FU	NR CNOX EI LA/KLB FU	SMK NUMBER CORRECTED
1	1.92	.23	31.00	31.35	18.17
3	2.23	.48	29.91	31.12	17.89
4	1.50	-.80	30.36	32.15	17.61
7	2.10	.19	27.63	27.76	17.05
8	2.97	.21	28.47	29.76	18.89
13	1.69	.24	27.71	27.71	14.47
14	3.13	.28	26.40	28.46	20.78
15	2.31	.37	31.75	32.61	-8.00
16	1.99	.27	30.71	32.00	15.73
17	2.04	.27	31.39	33.15	18.89

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 • 150 HOUR TEST SERIES •

MODE 5

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1	78.00	90.00	-87.00	76.54	88.31	85.37
3	78.00	90.00	86.00	77.78	89.74	85.75
4	77.00	89.00	86.00	76.78	88.74	85.75
7	78.00	89.00	86.00	77.33	88.24	85.26
8	77.00	89.00	86.00	76.34	88.24	85.26
13	77.00	90.00	86.00	76.63	89.57	85.59
14	77.00	89.00	86.00	76.63	88.57	85.59
15	77.00	-88.00	85.50	76.34	-87.25	84.77
16	77.00	89.00	86.00	76.20	88.07	85.10
17	77.00	90.00	86.00	76.20	89.06	85.10

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22A \* 150 HOUR TEST SERIES \*

MODE 5

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LBF
1	8500.	1.3890	1.5740	-1509.	1.302	24667.
3	9000.	1.3520	1.6670	1464.	1.302	24511.
4	8500.	1.2920	1.5740	1455.	1.302	24585.
7	9000.	1.2890	1.6670	-1428.	1.302	24544.
8	8750.	1.3060	1.6210	-1428.	1.302	24544.
13	8500.	1.3220	1.5770	-1439.	1.301	24343.
14	9000.	1.3570	1.6670	1464.	1.302	24421.
15	8500.	1.3440	1.5990	1473.	-1.294	-23835.
16	8500.	1.3110	1.5740	1464.	1.302	24503.
17	9000.	1.4030	1.6670	-1500.	1.302	24503.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RB211-22B • 150 HOUR TEST SERIES •

MODE 5

UNIT	CORR FU FL LBM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
1	8628.	1.3370	-1.5160	1453.	24568.
3	9047.	1.3440	1.6570	1455.	24568.
4	8519.	1.2850	1.5650	1446.	24568.
7	9087.	1.2670	1.6390	-1403.	24568.
8	8834.	1.2840	1.5930	-1403.	24568.
13	8592.	1.3100	1.5620	1426.	24490.
14	9098.	1.3440	1.6510	1450.	24568.
15	8611.	1.3210	1.5720	1448.	-23938.
16	8613.	1.2840	1.5420	1433.	24568.
17	9119.	1.3740	1.6320	1469.	24568.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22B • 150 HOUR TEST SERIES •

MODE 5

UNIT	CO2 CONC PER CFMT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	2.923	56.8	2.5	-158.1	-161.9
3	2.840	83.5	7.0	132.8	140.4
4	2.715	57.5	-10.3	120.8	130.3
7	2.708	71.1	3.5	121.0	124.2
8	2.742	103.3	4.8	120.8	131.7
13	2.776	69.8	3.8	119.8	121.6
14	2.844	-120.8	7.4	123.7	135.2
15	2.826	88.8	6.1	130.3	134.6
16	2.761	65.1	4.5	132.0	145.1
17	-2.959	60.5	3.6	-149.6	-164.2

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

R6211-228 \* 150 HOUR TEST SERIES \*

MODE 5

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMRER FRONT SIDE
1	3151.	3.89	.30	-17.22	-18.24	15.79
3	3147.	5.89	.85	15.39	16.26	13.64
4	3148.	4.24	-1.30	14.65	15.80	10.67
7	3149.	5.26	.45	14.72	15.10	13.25
8	3145.	7.54	.60	14.48	15.79	13.82
13	3144.	5.03	.47	14.19	-14.40	11.18
14	-3138.	-8.49	.90	14.27	15.60	14.57
15	3151.	6.30	.74	15.18	15.69	10.00
16	3156.	4.73	.56	15.77	-17.33	6.08
17	3157.	4.11	.41	-16.64	-18.31	15.89

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B \* 150 HOUR TEST SERIES \*

MODE 5

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	32.0110	32.7430	43.2160	26.6600	29.0750	42.8320
3	31.4550	36.3060	42.9630	30.5420	35.4630	48.7650
4	27.1190	31.1380	38.9130	26.4200	30.5880	44.2770
7	27.1550	30.5530	37.3140	25.0440	28.8150	42.5820
8	27.5500	30.5530	37.3140	25.3920	28.8150	42.5820
13	30.6840	36.0530	42.5080	29.1780	34.5410	47.9270
14	28.7750	31.2850	38.7360	27.3590	29.9850	43.7020
15	26.3220	-27.2530	-34.5940	24.1890	-25.5640	-39.4190
16	27.7190	30.4180	38.3350	25.0600	28.2480	42.0360
17	32.4940	34.3870	41.5590	29.2210	31.9100	45.5160

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22B • 150 HOUR TEST SERIES •

MODE 5

UNIT	NREC CO EI LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
1	4.68	.34	17.66	18.08	15.35
3	6.06	.87	17.46	18.46	12.75
4	4.36	-1.33	16.67	17.97	10.67
7	5.70	.48	16.79	17.23	13.25
8	8.18	.63	16.53	18.02	12.63
13	5.29	.49	16.00	-16.24	11.18
14	-8.92	.93	16.10	17.60	12.75
15	6.85	.79	17.30	17.87	9.69
16	5.24	.60	17.30	19.01	-6.08
17	4.57	.45	-18.27	-20.06	14.10

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RB211-22B \* 150 HOUR TEST SERIES \*

MODE 6

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1	55.00	78.00	79.00	53.97	76.54	77.52
3	55.50	77.00	79.00	55.34	76.79	-78.77
4	55.00	76.00	78.00	54.84	75.78	77.78
7	54.00	76.00	78.00	53.54	75.35	77.33
8	55.00	78.00	78.00	54.53	77.33	77.33
13	55.00	78.00	78.50	54.74	77.63	78.12
14	53.00	-81.00	-80.00	52.75	-80.61	-79.62
15	55.00	76.00	78.00	54.53	75.35	77.33
16	54.00	76.00	78.00	53.44	75.21	77.19
17	54.00	76.00	78.00	53.44	75.21	77.19

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 150 HOUR TEST SERIES •

MODE 6

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LAF
1	4100.	.9810	1.1840	1257.	1.128	10565.
3	4300.	.9870	1.2420	1221.	1.128	10498.
4	4100.	.9490	1.1840	1212.	1.128	10530.
7	4100.	.9200	1.1840	1203.	1.128	10512.
8	4200.	.9450	1.2130	1221.	1.128	10512.
13	4200.	.9580	1.2130	1210.	1.128	10460.
14	-4800.	-1.1450	-1.3860	-1279.	1.128	10460.
15	4100.	.9810	1.1950	1230.	-1.126	-10292.
16	4000.	.9160	1.1550	1221.	1.128	10495.
17	4000.	.9710	1.1550	1221.	1.128	10495.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 • 150 HOUR TEST SERIES •

MODE 6

UNIT	CORR FU FL LBM/HR	COR CH F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
1	4162.	.9450	1.1400	1210.	10523.
3	4323.	.9820	1.2340	1214.	10523.
4	4109.	.9440	1.1770	1205.	10523.
7	4140.	.9740	1.1640	1182.	10523.
8	4241.	.9290	1.1920	1200.	10523.
13	4246.	.9490	1.2010	1200.	10523.
14	-4852.	-1.1340	-1.1730	-1267.	10523.
15	4153.	.9640	1.1750	1209.	-10337.
16	4053.	.8970	1.1310	1195.	10523.
17	4053.	.9500	1.1310	1195.	10523.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22A • 150 HOUR TEST SERIES •

MODE 6

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	2.035	186.6	25.0	-48.7	57.1
3	2.038	223.1	45.7	40.4	54.4
4	1.944	208.4	-93.2	40.4	50.3
7	1.898	224.7	35.1	-30.9	-41.8
8	1.950	235.4	37.7	35.3	46.9
13	1.977	210.9	37.1	41.1	51.1
14	-2.360	-298.2	48.8	42.2	57.4
15	2.024	235.0	51.1	41.9	51.6
16	1.893	229.0	33.9	36.8	52.6
17	2.008	236.2	36.9	39.6	53.5

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

HA211-228 • 150 HOUR TEST SERIES •

MODE 6

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	3118.	18.20	4.18	-7.80	9.15	8.00
3	3103.	21.62	7.60	6.43	8.66	6.54
4	-3081.	21.02	-16.15	6.69	8.33	5.92
7	3104.	23.40	6.27	-5.28	-7.15	8.55
8	3103.	23.84	6.56	5.88	7.80	6.58
13	3103.	21.06	6.37	6.74	8.39	4.67
14	-3095.	24.89	7.00	5.79	7.87	-11.33
15	3103.	22.92	8.56	6.71	8.26	6.67
16	3111.	23.95	6.09	6.32	9.03	5.33
17	3111.	23.29	6.25	6.42	8.67	6.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RA211-228 • 150 HOUR TEST SERIES •

MODE 6

UNIT	FCO X100	FMC X100	FNO X100	STD FCO X100	STD FMC X100	STD FNO X100
1	6.0600	6.9960	16.3390	5.4110	6.3090	16.6080
3	5.7610	6.7650	15.0110	5.4510	6.6250	17.1120
4	5.1920	5.7900	13.6720	5.1070	5.7020	15.6220
7	5.1680	5.7560	13.1890	4.9080	5.4700	15.2180
8	6.2100	7.7950	15.8950	5.8870	7.3970	18.3230
13	6.3490	8.1470	16.7440	6.1370	7.8350	18.9960
14	-8.9240	-12.6710	-21.9990	-8.5990	-12.1720	-24.9130
15	5.3160	5.7910	13.2220	5.0310	5.4700	15.2180
16	5.1760	5.7560	13.5780	4.8550	5.3950	15.1130
17	5.2970	5.7560	13.5780	4.9640	5.3950	15.1130

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 • 150 HOUR TEST SERIES •

MODE 6

UNIT	NREC CO EI LB/KLA FU	NREC MC EI LB/KLA FU	NRE CNO EI LA/KLA FU	NR CNOX EI LA/KLA FU	SMK NUMBER CORRECTED
1	20.3A	4.64	7.93	9.30	8.00
3	22.04	7.76	7.32	9.97	6.54
4	21.3A	-16.40	7.64	9.52	5.43
7	24.63	6.60	-6.11	8.26	8.55
8	25.15	6.91	6.7A	8.99	6.5A
13	21.79	6.62	7.65	9.51	4.67
14	25.83	7.29	6.55	8.91	-11.33
15	24.22	9.06	7.73	9.52	6.67
16	25.54	6.50	7.04	10.06	5.33
17	24.86	6.67	7.15	9.64	6.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 150 HOUR TEST SERIES •

MODE 7

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1	-28.00	51.00	67.00	27.48	50.04	65.74
3	27.00	49.00	66.00	26.92	48.86	65.81
4	27.00	50.00	66.50	26.92	49.86	66.31
7	27.00	51.00	67.00	26.77	50.56	66.43
8	27.00	48.00	65.50	26.77	47.59	64.94
13	-28.00	51.00	67.00	-27.87	50.76	66.68
14	-26.00	49.00	67.00	-25.88	48.77	66.68
15	27.00	49.00	66.00	26.77	48.58	65.43
16	27.00	50.00	66.00	26.72	49.48	65.31
17	27.00	50.00	66.00	26.72	49.48	65.31

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 150 HOUR TFST SERIES •

MODE 7

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LBF
1	1800.	.8000	.9800	-1176.	1.033	3656.
3	1600.	.8130	.8710	1068.	1.022	3651.
4	1700.	.7850	.9260	1068.	1.028	3854.
7	1800.	.7850	.9800	1054.	1.023	3902.
8	1700.	.8170	.9260	1059.	1.023	3423.
13	1800.	.8220	.9800	1068.	1.028	-3998.
14	1700.	.8480	.9260	1063.	1.028	-3998.
15	1800.	.8420	.9800	1095.	1.030	3543.
16	1700.	.8090	.9260	1050.	1.034	3516.
17	1700.	.8170	.9260	1077.	-1.036	3516.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

R8211-22B • 150 HOUR TEST SERIES •

MODE 7

UNIT	CORR FU FL LBM/HR	COR CB F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
1	1827.	.7700	.9440	-1132.	3642.
3	1608.	.8080	.8660	1062.	3659.
4	1704.	.7810	.9210	1062.	3852.
7	1817.	.7720	.9640	1036.	3906.
8	1716.	.8030	.9100	1041.	3426.
13	1820.	.8140	.9710	1058.	-4023.
14	1718.	.8400	.9170	1053.	-4023.
15	1823.	.8280	.9640	1076.	3559.
16	1723.	.7920	.9070	1028.	3526.
17	1723.	.8000	.9070	1054.	3526.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RA211-22A \* 150 HOUR TEST SERIES \*

MODE 7

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.517	714.3	-286.4	8.8	-17.1
3	1.505	771.7	395.4	6.8	14.1
4	1.467	795.7	321.7	7.9	14.3
7	1.471	759.1	321.7	5.4	13.2
8	1.513	812.0	387.3	6.0	12.9
13	1.549	747.1	316.0	8.7	15.8
14	1.579	772.2	387.2	7.9	16.3
15	1.573	760.0	389.8	9.2	13.7
16	1.519	769.9	334.1	7.3	16.0
17	1.528	769.3	364.9	7.8	15.3

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 • 150 HOUR TEST SERIES •

MODE 7

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	-2861.	85.75	-59.05	1.73	-3.38	0.00
3	2795.	91.18	80.27	1.32	2.73	0.00
4	2820.	97.32	67.59	1.60	2.87	0.00
7	2827.	92.82	67.57	1.09	2.65	0.00
8	2794.	95.45	78.21	1.16	2.50	0.00
13	2842.	87.27	63.42	1.68	3.03	0.00
14	2810.	87.44	75.32	1.46	3.03	0.00
15	2817.	86.65	76.35	1.72	2.56	0.00
16	2834.	91.42	68.15	1.41	3.11	0.00
17	2821.	90.41	73.68	1.50	2.95	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22A \* 150 HOUR TEST SERIES \*

MODE 7

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	1.7750	.9100	4.7380	1.6250	.8360	4.9700
3	1.5830	.7730	4.1040	1.5590	.7590	4.7020
4	1.6380	.8340	4.2920	1.6170	.8240	4.9260
7	1.7350	.9100	4.3500	1.6640	.8720	5.0910
8	1.5290	.7120	3.7770	1.4670	.6830	4.4270
13	1.7480	.9160	4.4890	1.7010	.8850	5.1360
14	1.6110	.7790	4.0890	1.5670	.7530	4.6810
15	1.6180	.7790	3.9710	1.5480	.7420	4.6400
16	1.6800	.8440	4.2780	1.5950	.7990	4.8400
17	1.6850	.8440	4.2780	1.5990	.7990	4.8400

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 \* 150 HOUR TEST SERIES \*

MODE 7

UNIT	NREC CO EI LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMRER CORRECTED
1	93.62	64.24	1.82	3.55	0.00
3	92.58	81.71	1.52	3.13	0.00
4	98.59	68.44	1.83	3.30	0.00
7	96.78	70.55	1.28	3.10	0.00
8	99.46	81.58	1.36	2.93	0.00
13	89.70	65.60	1.92	3.47	0.00
14	89.86	77.89	1.67	3.46	0.00
15	90.57	80.15	2.01	2.99	0.00
16	96.30	72.00	1.60	3.52	0.00
17	95.25	77.84	1.70	3.34	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22B \* 150 HOUR TEST SERIES \*

MODE 8

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1	25.00	46.00	64.00	24.53	45.14	62.80
3	23.00	43.00	62.00	22.93	42.88	61.82
4	23.00	44.00	62.50	22.93	43.87	62.32
7	24.00	45.00	63.00	23.79	44.61	62.46
8	23.00	44.00	62.00	22.80	43.62	61.47
13	24.00	44.00	63.00	23.89	43.79	62.70
14	23.00	44.00	63.00	22.89	43.79	62.70
15	22.00	-42.00	-60.00	21.81	-41.64	-59.49
16	22.00	44.00	62.00	21.77	43.54	61.35
17	22.00	-42.00	61.00	21.77	-41.56	-60.36

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



R8211-228 \* 150 HOUR TEST SERIES \*

MODE 8

UNIT	FUEL FLOW LBM/HR	CB F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LAF
1	1550.	.7920	.8440	-1086.	1.028	2872.
3	1400.	.8150	.7630	1032.	1.014	2658.
4	1400.	.7820	.7630	1032.	1.018	2766.
7	1500.	.7890	.8170	1041.	1.014	2789.
8	1500.	.8250	.8170	1032.	1.015	2591.
13	1500.	.8280	.8170	1050.	1.020	2823.
14	1500.	.8220	.8170	1032.	1.020	2823.
15	1500.	.8500	.8170	1068.	1.020	-2213.
16	1400.	.8000	.7630	1032.	1.026	2564.
17	1400.	.8250	.7630	1068.	1.025	-2266.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22R • 150 HOUR TEST SERIES •

MODE 8

UNIT	CORR FU FL LAM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LAF
1	1573.	.7630	.8130	1045.	2860.
3	1407.	.8100	.7580	1026.	2664.
4	1403.	.7770	.7580	1026.	2764.
7	1514.	.7750	.8030	1023.	2792.
8	1514.	.8110	.8030	1014.	2594.
13	1516.	.8200	.8090	1040.	2840.
14	1516.	.8150	.8090	1022.	2840.
15	1520.	.8350	.8030	1049.	-2223.
16	1419.	.7830	.7470	1010.	2571.
17	1419.	.8040	.7470	1046.	-2373.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 150 HOUR TFST SERIES •

MODE 8

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.453	838.4	-401.0	6.5	-14.4
3	1.445	927.1	553.6	5.2	11.1
4	1.403	937.7	458.0	6.4	11.6
7	1.431	886.1	435.3	4.8	11.2
8	1.483	892.4	509.9	4.5	11.0
13	1.500	909.3	463.6	6.9	12.7
14	1.483	882.5	490.5	6.9	13.5
15	1.518	913.7	567.6	-8.4	10.8
16	1.438	923.2	485.5	5.3	12.2
17	1.468	966.1	547.4	5.4	11.8

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22A • 150 HOUR TEST SERIES •

MODE A

UNIT	CO <sub>2</sub> EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NO <sub>x</sub> EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	2769.	101.68	-83.55	1.29	-2.86	0.00
3	2678.	109.38	112.21	1.01	2.16	0.00
4	2711.	115.31	96.77	1.30	2.34	0.00
7	2739.	107.92	91.09	.96	2.25	0.00
8	2715.	103.95	102.04	.86	2.10	0.00
13	2734.	105.47	92.38	1.32	2.42	0.00
14	2722.	103.09	98.45	1.32	2.59	0.00
15	2698.	103.33	110.28	-1.55	-2.01	0.00
16	2716.	110.94	100.23	1.05	2.41	0.00
17	2667.	112.58	109.59	1.22	2.27	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22R • 150 HOUR TEST SERIES •

MODE 8

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	1.3990	.5950	-3.7170	1.2860	.5490	3.9220
3	1.1660	.4440	3.0060	1.1490	.4360	3.4470
4	1.2190	.4890	3.1770	1.2040	.4840	3.6510
7	1.3050	.5430	3.2430	1.2550	.5210	3.8080
8	1.2480	.4910	3.0630	1.1990	.4710	3.5990
13	1.2460	.4950	3.1680	1.2140	.4790	3.6330
14	1.2440	.4950	3.1680	1.2120	.4790	3.6330
15	1.1220	.4000	-2.7320	-1.0760	-.3820	-3.2050
16	1.2440	.4920	3.1530	1.1840	.4670	3.5820
17	1.1160	.3990	2.8050	-1.0630	-.3790	-3.1920

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



R9211-22A • 150 HOUR TEST SERIES •

MODE A

UNIT	NREC CO EI LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
1	110.59	90.56	1.36	3.02	0.00
3	110.98	114.14	1.16	2.48	0.00
4	116.74	97.92	1.49	2.69	0.00
7	112.30	94.92	1.12	2.64	0.00
8	108.18	106.29	1.01	2.46	0.00
13	108.28	95.43	1.51	2.78	0.00
14	105.83	101.70	1.51	2.99	0.00
15	107.74	115.48	-1.42	2.36	0.00
16	116.56	105.62	1.19	2.74	0.00
17	118.21	115.38	1.38	2.58	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 300 HOUR TEST SERIES •

UNIT	TSO HR	TSB HR	AMB TEMP DEG R	AMB PRESS IN HG	AMB HUMID LB H2O/AIR
1	2680.	386.	527.7	29.98	.009810
3	3379.	361.	527.7	29.90	.009210
4	5448.	351.	527.7	29.90	.009210
11	3252.	311.	527.7	30.02	.009790
12	1170.	311.	527.7	30.02	.009790
13	3217.	328.	520.7	30.05	.008940
14	1703.	328.	520.7	30.05	.008940

RB211-228 • 300 HOUR TEST SERIES •

MODE 1

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1	25.00	46.00	62.00	24.79	45.61	61.47
3	23.00	44.00	62.50	22.80	43.62	61.96
4	23.00	45.00	63.00	22.80	44.61	62.46
11	24.00	44.00	62.00	23.79	43.62	61.47
12	24.00	46.00	63.00	23.79	45.61	62.46
13	24.00	45.00	63.00	23.95	44.91	62.88
14	23.00	44.00	62.00	22.96	43.92	61.88

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

R8211-228 • 300 HOUR TEST SERIES •

MODE 1

UNIT	FUEL FLOW LBM/HR	CB F/A X100	PERF F/A X100	T17 DEG R	EPR	THRUST LAF
1	1600.	.8330	.8710	1068.	-1.008	2589.
3	1500.	.8560	.8170	1032.	1.012	2695.
4	1500.	.8310	.8170	1041.	1.017	2794.
11	1500.	.8620	.8170	1059.	1.015	2585.
12	1550.	.3690	.8440	1059.	1.015	2783.
13	1600.	.8460	.8710	1050.	1.020	2863.
14	1600.	.8600	.8710	1032.	1.022	2665.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 • 300 HOUR TEST SERIES •

MODE 1

UNIT	CORR FU FL LBM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
1	1617.	.8180	.8570	1049.	2594.
3	1512.	.8420	.8030	1014.	2693.
4	1512.	.8170	.8030	1023.	2792.
11	1518.	.8470	.8030	1041.	2594.
12	1569.	.8540	.8300	1041.	2792.
13	1610.	.8430	.8680	1046.	2876.
14	1610.	.8560	.8680	1028.	2676.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RE211-22B • 300 HOUR TEST SERIES •

MODE 1

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.516	869.6	472.0	7.0	-2.5
3	1.547	862.5	539.2	6.3	11.3
4	1.513	891.2	468.6	7.7	10.0
11	1.621	-753.2	-363.5	5.7	14.0
12	1.583	877.0	493.2	6.0	11.8
13	1.545	858.4	478.7	6.0	10.0
14	1.564	867.1	506.2	6.6	10.8

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 • 300 HOUR TEST SERIES •

MODE 1

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	2748.	100.32	93.55	1.32	-1.32	0.00
3	2728.	96.78	103.94	1.16	2.08	0.00
4	2748.	103.02	93.06	1.46	1.90	0.00
11	-2836.	83.86	-69.52	1.03	2.57	0.00
12	2749.	96.94	93.66	1.09	2.14	0.00
13	2756.	97.43	93.35	1.13	1.87	0.00
14	2746.	96.90	97.19	1.21	1.99	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 300 HOUR TEST SERIES •

MODE 1

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	1.3970	.5990	3.5170	1.3410	.5740	4.0220
3	1.2580	.4890	3.1750	1.2100	.4710	3.5990
4	1.3210	.5410	3.3610	1.2700	.5210	3.8080
11	1.2640	.4930	3.1460	1.2120	.4710	3.5990
12	1.4140	.6010	3.5200	1.3550	.5740	4.0220
13	1.3170	.5460	3.3120	1.3010	.5370	3.8730
14	1.2510	.4940	3.1290	1.2360	.4860	3.6590

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 \* 300 HOUR TEST SERIES \*

MODE 1

UNIT	NREC CO EI LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
1	104.57	97.69	1.51	-1.51	0.00
3	100.62	107.95	1.31	2.35	0.00
4	107.12	96.69	1.66	2.16	0.00
11	-87.45	-72.72	1.18	2.94	0.00
12	101.18	98.04	1.24	2.45	0.00
13	98.61	94.91	1.32	2.18	0.00
14	98.07	98.81	1.41	2.32	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 \* 300 HOUR TEST SERIES \*

MODE 2

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1	27.00	50.00	66.00	26.77	49.57	65.43
3	27.00	50.00	66.00	26.77	49.57	65.43
4	27.00	50.00	66.00	26.77	49.57	65.43
11	-28.00	51.00	66.00	-27.76	50.56	65.43
12	27.00	50.00	66.00	26.77	49.57	65.43
13	27.00	49.00	66.00	26.95	48.91	65.87
14	27.00	51.00	66.00	26.95	50.90	65.87

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RB211-22A • 300 HOUR TEST SERIES •

MODE 2

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TTT DEG R	EPR	THRUST LBF
1	1800.	.8450	.9800	1086.	1.030	7552.
3	1800.	.8490	.9800	1050.	1.020	7561.
4	1700.	.8220	.9260	1059.	1.024	7561.
11	1800.	.8600	.9800	1068.	1.025	7547.
12	1700.	.8790	.9260	1068.	1.030	7547.
13	1800.	.8420	.9800	1068.	1.025	7660.
14	-1900.	.8790	-1.0350	1068.	1.030	7660.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 300 HOUR TEST SERIES •

MODE 2

UNIT	CORR FU FL LBM/HR	COR CB F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
1	1819.	.8300	.9640	1067.	3559.
3	1814.	.8340	.9640	-1032.	3559.
4	1714.	.8080	.9100	1041.	3559.
11	1822.	.8450	.9640	1049.	3559.
12	1720.	.8640	.9100	1049.	3559.
13	1811.	.8390	.9770	1064.	3676.
14	-1912.	.8760	-1.0310	1064.	3676.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-22B • 300 HOUR TEST SERIES •

MODE 2

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.579	776.6	380.5	7.2	-2.7
3	1.590	703.9	400.7	7.3	14.2
4	1.547	755.9	340.3	8.0	13.6
11	1.615	756.8	364.9	5.3	14.8
12	1.649	753.6	386.7	6.5	14.4
13	1.582	734.9	374.3	5.3	13.6
14	1.556	729.8	387.5	6.6	14.6

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

R8211-228 • 300 HOUR TEST SERIES •

MODE 2

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	2820.	88.26	74.29	1.34	-1.34	0.00
3	2826.	79.64	77.89	1.35	2.63	0.00
4	2839.	88.27	68.26	1.53	2.61	0.00
11	2833.	84.50	69.99	.97	2.71	0.00
12	2830.	82.29	72.55	1.17	2.59	0.00
13	2832.	83.77	73.29	.99	2.55	0.00
14	2840.	79.67	72.67	1.19	2.62	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22R • 300 HOUR TEST SERIES •

MODE 2

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	1.6920	.8420	4.2600	1.6210	.8050	4.8620
3	1.6910	.8380	4.3030	1.6230	.8050	4.8620
4	1.6770	.8380	4.3030	1.6100	.8050	4.8620
11	1.7800	.9140	4.4670	1.7030	.8720	5.0910
12	1.7130	.8440	4.2640	1.6390	.8050	4.8620
13	1.5970	.7750	4.0320	1.5770	.7620	4.7120
14	1.7690	.9110	4.4260	1.7460	.8950	5.1710

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RB211-228 • 300 HOUR TEST SERIES •

MODE 2

UNIT	NREC CO EI LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
1	92.12	77.69	1.53	-1.53	0.00
3	82.97	81.05	1.53	2.97	0.00
4	91.93	71.04	1.73	2.95	0.00
11	88.33	73.39	1.10	3.09	0.00
12	86.02	76.04	1.33	2.95	0.00
13	84.81	74.54	1.15	2.98	0.00
14	80.68	73.92	1.39	3.06	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

R4211-22R • 300 HOUR TEST SERIES •

MODE 3

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1	94.00	98.00	92.00	93.19	97.16	91.21
3	93.75	96.50	93.00	92.95	95.67	92.20
4	94.00	98.00	92.50	93.19	97.16	91.71
11	93.00	96.00	92.00	92.20	95.18	91.21
12	93.00	97.00	93.00	92.20	96.17	92.20
13	93.00	98.00	93.00	92.82	97.81	92.82
14	93.00	97.00	92.00	92.82	96.81	91.82

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 300 HOUR TEST SERIES •

MODE 3

UNIT	FUEL FLOW LBM/HR	CB F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LAF
1	15500.	1.8410	2.0680	1770.	1.533	41916.
3	15375.	1.8430	2.0510	1734.	1.533	41991.
4	15625.	1.7500	2.0850	1738.	1.538	42359.
11	15500.	1.8470	2.0940	1743.	-1.520	-40907.
12	15900.	1.9050	2.1210	1743.	1.533	41860.
13	15500.	1.7850	2.0720	1734.	1.530	41599.
14	15500.	1.8430	2.0720	1752.	1.530	41599.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22B • 300 HOUR TEST SERIES •

MODE 3

UNIT	CORR FU FL LBM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
1	15665.	1.8100	2.0330	1740.	42000.
3	15497.	1.8120	2.0160	1704.	41963.
4	15749.	-1.7200	2.0490	1709.	42331.
11	15686.	1.8150	2.0590	1713.	-41044.
12	16091.	1.8730	2.0850	1713.	42000.
13	15597.	1.7780	2.0640	1727.	41779.
14	15597.	1.8360	2.0640	1745.	41779.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 \* 300 HOUR TEST SERIES \*

MODE 3

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	3.903	25.5	5.2	426.9	416.9
3	3.908	29.5	5.8	383.6	380.7
4	3.708	20.5	4.3	372.4	375.3
11	3.910	23.8	5.0	411.1	403.4
12	4.037	27.4	-0.6	395.0	395.5
13	3.784	19.4	4.2	372.1	371.1
14	3.909	-35.9	4.3	354.4	357.3

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RB211-228 \* 300 HOUR TEST SERIES \*

MODE 3

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBRER FRONT SIDE
1	3159.	1.31	.46	36.13	36.13	30.00
3	3161.	1.52	.51	32.43	32.43	-22.67
4	3162.	1.11	.40	33.20	33.46	28.00
11	3155.	1.22	.44	34.68	34.68	30.67
12	3156.	1.37	-.05	32.29	32.32	32.67
13	3162.	1.03	.38	32.51	32.51	32.45
14	3161.	-1.85	.38	29.96	30.21	28.38

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 300 HOUR TEST SERIES •

MODE 3

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	113.5710	106.6590	90.3240	100.7950	99.7470	99.3780
3	98.1510	87.2400	79.3560	87.4670	82.0700	86.5910
4	101.4400	106.1470	91.2390	90.7080	99.7470	99.3780
11	93.8650	-82.0040	74.8120	83.4440	-76.6210	-82.4340
12	112.0630	94.1120	82.6410	99.0950	87.8640	90.9420
13	99.7400	101.9560	85.7350	96.9970	99.7470	99.3780
14	103.9950	98.0220	83.3900	101.0690	95.9030	96.6680

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 300 HOUR TEST SERIES •

MODE 3

UNIT	NREC CO EI LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
1	1.48	.50	39.75	39.75	26.78
3	1.70	.54	35.39	35.39	22.59
4	1.24	.42	36.16	36.44	22.59
11	1.38	.48	38.22	38.22	24.60
12	1.54	-.06	35.53	35.57	28.67
13	1.06	.39	37.69	37.69	26.78
14	1.90	.39	34.73	35.02	23.05

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 300 HOUR TEST SERIES •

MODE 4

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1	87.00	94.00	90.00	86.25	93.19	89.23
3	88.75	94.00	90.75	87.99	93.19	89.97
4	88.00	94.00	90.00	87.25	93.19	89.23
11	88.00	94.00	90.00	87.25	93.19	89.23
12	88.00	94.00	90.00	87.25	93.19	89.23
13	88.00	95.00	91.00	87.83	94.82	90.83
14	88.00	95.00	89.00	87.83	94.82	88.83

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 300 HOUR TEST SERIES •

MODE 4

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LBF
1	12500.	1.6390	1.8330	1642.	1.446	35542.
3	13000.	1.6640	1.9060	1644.	1.446	35637.
4	12875.	1.5530	1.8880	1639.	1.446	35637.
11	12500.	1.6540	1.8330	1653.	1.446	35495.
12	12500.	1.6280	1.8330	1635.	1.446	35495.
13	12500.	1.5540	1.8330	1626.	1.446	35459.
14	13000.	1.6320	1.9060	1644.	1.446	35459.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RB211-22B • 300 HOUR TEST SERIES •

MODE 4

UNIT	COPR FU FL LBM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
1	12637.	1.6110	1.8020	1633.	35613.
3	13104.	1.6350	1.8740	1616.	35613.
4	12978.	-1.5260	1.8560	1611.	35613.
11	12650.	1.6250	1.8020	1625.	35613.
12	12650.	1.6000	1.8020	1607.	35613.
13	12578.	1.5480	1.8260	1619.	35613.
14	13082.	1.6250	1.8990	1637.	35613.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 300 HOUR TEST SERIES •

MODE 4

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	3.467	33.9	3.4	306.0	305.9
3	3.521	38.8	3.9	269.4	269.3
4	3.285	24.7	2.4	258.1	262.0
11	3.494	29.9	2.7	276.3	278.4
12	3.438	35.8	-0.2	253.0	264.4
13	3.287	28.9	2.2	239.2	242.7
14	3.451	-57.3	2.6	242.0	254.1

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22A • 300 HOUR TEST SERIES •

MODE 4

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	3159.	1.97	.34	29.15	29.15	23.49
3	3161.	2.21	.38	25.2A	25.2A	17.57
4	3162.	1.5.	.25	25.9A	26.37	17.33
11	3155.	1.72	.27	26.09	26.2A	-30.20
12	3155.	2.09	-.02	24.27	25.36	23.37
13	3162.	1.77	.23	24.05	24.40	17.88
14	3159.	-5.34	.26	23.17	24.32	19.87

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

R9211-22A • 300 HOUR TEST SERIES •

MODE 4

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	60.9610	62.4180	61.8350	55.0270	58.5480	68.3670
3	62.4390	62.1190	62.4610	56.4050	58.5480	68.3670
4	55.6870	62.1190	62.4610	50.5770	58.5480	68.3670
11	61.9480	62.5680	61.8950	55.8220	58.5480	68.3670
12	60.2870	62.5680	61.8950	54.3960	58.5480	68.3670
13	61.8190	74.6070	68.7120	60.3140	73.0190	79.6970
14	66.9710	74.6070	68.7120	65.2890	73.0190	79.6970

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 300 HOUR TEST SERIES •

MODE 4

UNIT	NREC CO EI	NREC HC EI	NRE CNO EI	NP CNOX EI	SMK NUMBER
	LB/KLB FU	LB/KLB FU	LB/KLB FU	LB/KLB FU	CORRECTED
1	2.18	.37	32.23	32.23	19.61
3	2.45	.40	27.67	27.67	17.57
4	1.66	.26	28.43	28.86	15.99
11	1.91	.29	28.82	29.03	-27.16
12	2.32	-.03	26.81	28.01	21.53
13	1.81	.23	27.90	28.30	14.22
14	-3.43	.27	26.87	28.21	17.75

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RR211-228 • 300 HOUR TEST SERIES •

MODE 5

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1	78.00	89.00	86.00	77.33	88.24	85.26
3	78.00	89.00	86.50	77.33	88.24	85.76
4	77.50	89.00	85.75	76.84	88.24	85.02
11	78.00	90.00	86.00	77.33	89.23	85.26
12	78.00	90.00	86.00	77.33	89.23	85.26
13	77.00	90.00	86.00	76.85	89.83	85.83
14	77.00	89.00	85.00	76.85	88.83	84.84

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-229 \* 300 HOUR TEST SERIES \*

MODE 5

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TYT DEG R	EPR	THRUST LBF
1	8500.	1.3220	1.5740	1482.	1.302	24519.
3	8625.	1.3520	1.5980	1464.	1.302	24585.
4	8500.	1.2720	1.5740	1459.	1.302	24585.
11	8500.	1.3690	1.5740	-1518.	1.302	24486.
12	8500.	1.3470	1.5740	1482.	1.302	24486.
13	8500.	1.2880	1.5740	1464.	1.302	24462.
14	8500.	1.3360	1.5740	1464.	1.302	24462.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 • 300 HOUR TEST SERIES •

MODE 5

UNIT	CORR FUEL LBM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
1	8591.	1.3000	1.5480	1456.	24568.
3	8694.	1.3290	1.5700	1439.	24568.
4	8568.	-1.2510	1.5480	1434.	24568.
11	8602.	1.3460	1.5480	-1492.	24568.
12	8602.	1.3240	1.5480	1456.	24568.
13	8553.	1.2830	1.5680	1458.	24568.
14	8553.	1.3300	1.5680	1458.	24568.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 300 HOUR TEST SERIES •

MODE 5

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	2.782	76.2	5.0	132.7	139.9
3	2.848	80.8	6.0	130.3	136.6
4	2.679	58.4	3.9	117.7	125.5
11	2.880	66.5	4.1	128.6	135.6
12	2.832	72.9	3.8	124.1	133.6
13	2.711	71.6	4.3	115.4	124.1
14	2.807	-119.4	6.6	119.3	129.4

NOTE- MINUS SIGN DENOTE OUTLYING VALUES

RA211-22R \* 300 HOUR TEST SERIES \*

MODE 5

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	3152.	5.50	.62	15.72	16.57	16.00
3	3154.	5.69	.72	15.09	15.82	10.60
4	3157.	4.38	.50	14.50	15.46	10.74
11	3150.	4.63	.49	14.70	15.50	-28.10
12	3149.	5.16	.46	14.42	15.53	-20.53
13	3155.	5.30	.55	14.05	15.10	9.27
14	3149.	-8.53	.81	13.99	15.18	12.58

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RB211-22B \* 300 HOUR TEST SERIES \*

MODE 5

UNIT	FCO X100	FMC X100	FNO X100	STD FCO X100	STD FMC X100	STD FNO X100
1	27.9360	30.6080	38.2840	25.7140	28.8150	42.5820
3	28.5850	30.4610	38.6720	26.3350	28.8150	42.5820
4	26.7630	30.4610	38.6720	24.7270	28.8150	42.5820
11	31.6750	34.9090	41.7130	29.0470	32.7640	46.3030
12	31.0740	34.9090	41.7130	28.5190	32.7640	46.3030
13	29.9160	36.6840	42.3510	29.2930	35.9340	49.1490
14	28.1810	31.5340	38.3610	27.5910	30.8940	44.5680

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 \* 300 HOUR TEST SERIES \*

MODE 5

UNIT	NREC CO FI LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SKK NUMBER CORRECTED
1	5.97	.66	17.49	18.43	15.10
3	6.18	.76	16.62	17.42	10.35
4	4.74	.53	15.97	17.02	10.74
11	5.05	.52	16.32	17.20	-22.28
12	5.62	.49	16.01	17.24	-19.61
13	5.42	.56	16.32	17.54	8.94
14	-8.71	.82	16.26	17.63	10.35

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 300 HOUR TEST SERIFS •

MODE 6

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1	54.00	76.00	78.00	53.54	75.35	77.33
3	55.00	77.50	78.75	54.53	76.84	78.08
4	55.00	77.00	78.00	54.53	76.34	77.33
11	55.00	76.00	78.00	54.53	75.35	77.33
12	54.00	78.00	78.00	53.54	77.33	77.33
13	55.00	77.00	78.00	54.89	76.85	77.85
14	53.00	-81.00	78.00	52.90	-80.84	77.85

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22b • 300 HOUR TEST SERIES •

MODE 6

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT7 DEG R	FPR	THRUST LBF
1	4050.	.9370	1.1690	1248.	1.128	10502.
3	4200.	.9700	1.2300	1221.	-1.125	-10250.
4	4200.	.9120	1.2180	1221.	-1.127	10437.
11	4400.	1.0030	1.2710	1248.	1.128	10488.
12	4200.	.9700	1.2130	1239.	1.128	10488.
13	4200.	.9200	1.2130	1212.	1.128	10477.
14	-4600.	-1.1030	-1.3280	1248.	1.128	10477.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22B • 300 HOUR TEST SERIES •

MODE 6

UNIT	CORR FU FL LAM/HR	COR CB F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
1	4093.	.9210	1.1490	1226.	10521.
3	4213.	.9540	1.2090	1200.	-10243.
4	4233.	.8970	1.1980	1200.	-10430.
11	4453.	.9850	1.2490	1226.	10523.
12	4250.	.9530	1.1920	1218.	10523.
13	4226.	.9170	1.2080	1207.	10523.
14	-4620.	-1.0990	-1.3230	-1247.	10523.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RA211-228 • 300 HOUR TEST SERIES •

MODE 6

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.936	213.5	37.6	40.4	50.2
3	2.007	220.3	42.2	36.7	49.6
4	1.891	193.5	28.0	38.1	48.7
11	2.073	211.8	39.0	37.1	49.4
12	2.003	223.3	40.7	39.2	52.3
13	1.903	217.3	38.0	35.7	49.6
14	-2.276	-305.0	-57.9	39.1	56.3

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 • 300 HOUR TEST SERIES •

MODE 6

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	3110.	21.83	6.61	6.78	8.43	10.07
3	3111.	21.73	7.16	5.94	8.04	4.00
4	3119.	20.31	5.06	6.57	8.40	4.03
11	3109.	20.21	6.39	5.82	7.74	-18.54
12	3105.	22.03	6.89	6.35	8.48	-11.18
13	3111.	22.61	6.80	6.10	8.48	2.65
14	3100.	26.44	8.63	5.56	8.01	6.62

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 • 300 HOUR TEST SERIES •

MODE 6

UNIT	FCO X100	FMC X100	FNO X100	STD FCO X100	STD FMC X100	STD FNO X100
1	5.2090	5.7670	13.5320	4.9410	5.4700	15.2380
3	5.9220	7.0390	15.4840	5.6220	6.7030	17.2360
4	5.4520	6.3590	14.5440	5.1820	6.0570	16.2010
11	5.3610	5.7800	13.5450	5.0760	5.4700	15.2380
12	6.2880	7.8280	16.3240	5.9480	7.3970	18.3230
13	5.6270	6.8530	14.8270	5.5450	6.7240	17.2700
14	-8.7200	-12.7440	-21.7470	-8.5820	-12.4970	-25.3040

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 \* 300 HOUR TEST SERIES \*

MODE 6

UNIT	NREC CO EI	NREC HC EI	NRE CNO EI	NR CNOX EI	SMK NUMBER
	LB/KLB FU	LB/KLB FU	LB/KLB FU	LB/KLB FU	CORRECTED
1	23.00	6.96	7.64	9.50	6.37
3	22.90	7.52	6.61	8.94	4.00
4	21.37	5.31	7.32	9.35	4.03
11	21.35	6.75	6.55	8.71	-18.54
12	23.29	7.29	7.13	9.52	9.58
13	22.94	6.93	7.10	9.87	2.65
14	26.87	8.80	6.47	9.32	6.62

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22B • 300 HOUR TEST SERIES •

MODE 7

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1	27.00	49.00	66.00	26.77	48.58	65.43
3	27.00	49.00	66.00	26.77	48.58	65.43
4	27.00	49.00	66.25	26.77	48.58	65.68
11	-28.00	51.00	66.00	-27.76	50.56	65.43
12	-25.00	48.00	-65.00	-24.79	47.59	-64.44
13	27.00	49.00	66.00	26.95	48.91	65.87
14	27.00	50.00	66.00	26.95	49.90	65.87

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RA211-228 \* 300 HOUR TEST SERIES \*

MODE 7

UNIT	FUEL FLOW LBM/HR	CB F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LAF
1	1700.	.7950	.9260	1086.	1.030	3552.
3	1600.	.8130	.8710	1059.	1.022	3561.
4	1600.	.7730	.8710	1059.	1.024	3627.
11	1800.	.8450	.9800	1086.	1.025	3547.
12	1600.	.8290	.8710	1068.	1.025	3282.
13	1600.	.7970	.8710	1068.	1.025	3660.
14	1800.	.8250	.9800	1068.	1.030	3660.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 • 300 HOUR TEST SERIES •

MODE 7

UNIT	CORR FU FL LBM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LRF
1	1718.	.7810	.9100	1067.	3559.
3	1613.	.7990	.8570	1041.	3559.
4	1613.	.7600	.8570	1041.	3625.
11	1822.	.8300	.9640	1067.	3559.
12	1619.	.8140	.8570	1049.	3293.
13	1610.	.7940	.8680	1064.	3676.
14	1811.	.8220	.9770	1064.	3676.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B \* 300 HOUR TEST SERIES \*

MODE 7

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.470	907.5	381.4	8.5	15.1
3	1.514	761.7	383.3	8.3	14.8
4	1.442	784.0	331.7	8.7	14.3
11	1.580	785.0	365.8	7.3	15.2
12	1.527	833.6	413.1	7.0	14.4
13	1.467	830.4	406.2	6.6	14.5
14	1.532	772.2	404.0	7.4	15.9

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 \* 300 HOUR TEST SERIES \*

MODE 7

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	2792.	97.62	79.22	1.68	3.00	0.00
3	2810.	89.98	77.78	1.60	2.88	0.00
4	2818.	97.46	70.84	1.78	2.93	0.00
11	2822.	89.22	71.42	1.36	2.84	0.00
12	2781.	96.61	82.26	1.34	2.73	0.00
13	2777.	100.04	84.07	1.31	2.86	0.00
14	2802.	89.89	80.79	1.42	3.04	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 \* 300 HOUR TEST SERIES \*

MODE 7

INIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	1.5910	.7760	4.0640	1.5260	.7420	4.6400
3	1.5980	.7720	4.1050	1.5350	.7420	4.6400
4	1.5770	.7720	4.1050	1.5160	.7420	4.6400
11	1.7720	.9140	4.4670	1.6950	.8720	5.0910
12	1.5370	.7150	3.8790	1.4720	.6830	4.4270
13	1.5740	.7750	4.0320	1.5550	.7620	4.7120
14	1.6620	.8410	4.2250	1.6420	.8270	4.9370

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RA211-22A \* 300 HOUR TEST SERIES \*

MODE 7

UNIT	NREC CO FI LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO FI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
1	101.80	82.81	1.92	3.43	0.00
3	93.66	80.92	1.81	3.26	0.00
4	101.41	73.70	2.01	3.31	0.00
11	93.26	74.89	1.55	3.23	0.00
12	100.86	86.17	1.53	3.12	0.00
13	101.27	85.50	1.53	3.35	0.00
14	91.00	82.17	1.66	3.56	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-225 \* 300 HOUR TEST SERIES \*

MODE B

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1	25.00	46.00	63.00	24.79	45.61	62.46
3	23.00	44.00	62.50	22.80	43.62	61.96
4	23.00	44.00	63.00	22.80	43.62	62.46
11	24.00	44.00	62.00	23.79	43.62	61.47
12	23.00	45.00	63.00	22.80	44.61	62.46
13	24.00	44.00	63.00	23.95	43.92	62.88
14	23.00	44.00	62.00	22.96	43.92	61.88

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

AD-A070 579

NORTHERN RESEARCH AND ENGINEERING CORP CAMBRIDGE MASS F/O 13/2  
TIME DEGRADATION FACTORS FOR TURBINE ENGINE EXHAUST EMISSIONS. --ETC(U)  
MAY 78 DOT-FA74NA-1100

**F/6 13/2**

**UNCLASSIFIED**

**NREC-1238-12**

**FAA-RD-78-56-7**

DOT-FA74NA-1100

NL

3 OF 4

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A070579

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RB211-22B • 300 HOUR TFST SERIES •

MODE 8

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LBF
1	1600.	.8040	.8710	1050.	1.025	2787.
3	1400.	.8160	.7630	1032.	1.014	2695.
4	1400.	.7710	.7630	1032.	1.019	2794.
11	1500.	.8550	.8170	1059.	1.015	2585.
12	1450.	.8290	.7900	1068.	1.020	2783.
13	1500.	.8080	.8170	1050.	1.020	2863.
14	1500.	.8190	.8170	1032.	1.022	2665.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22A • 300 HOUR TEST SERIES •

MODE 8

UNIT	CORR FU FL LRM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
1	1417.	.7900	.8570	1032.	2792.
3	1411.	.8030	.7500	1014.	2693.
4	1411.	.7580	.7500	1014.	2792.
11	1518.	.8400	.8030	1041.	2594.
12	1467.	.8150	.7760	1049.	2792.
13	1509.	.8040	.8140	1046.	2876.
14	1509.	.8160	.8140	1028.	2676.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



R9211-22B • 300 HOUR TEST SERIES •

MODE A

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.450	887.6	485.3	6.2	12.7
3	1.472	891.8	501.1	6.4	11.8
4	1.395	893.8	440.4	6.8	12.0
11	1.537	910.7	536.6	5.5	12.4
12	1.487	936.5	511.4	5.7	12.6
13	1.449	924.5	502.5	5.5	12.4
14	1.469	899.5	529.0	6.2	12.8

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 • 300 HOUR TEST SERIES •

MODE A

UNIT	CO2 EI LB/KLB FU	CO FI LB/KLB FU	HC FI LB/KLB FU	NO FI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	2723.	106.08	99.64	1.21	2.50	0.00
3	2722.	104.97	101.32	1.25	2.27	0.00
4	2731.	111.37	94.28	1.40	2.46	0.00
11	2713.	102.32	103.58	1.01	2.29	0.00
12	2708.	108.55	101.83	1.09	2.40	0.00
13	2710.	110.03	102.74	1.07	2.43	0.00
14	2707.	105.51	106.60	1.20	2.47	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

R9211-228 • 300 HOUR TEST SERIES •

MODE A

UNIT	FCO X100	FMC X100	FNO X100	STD FCO X100	STD FMC X100	STD FNO X100
1	1.3850	.5990	3.5170	1.3290	.5740	4.0220
3	1.2430	.4890	3.1750	1.1960	.4710	3.5990
4	1.2270	.4890	3.1750	1.1810	.4710	3.5990
11	1.2620	.4930	3.1460	1.2100	.4710	3.5990
12	1.3240	.5450	3.3310	1.2690	.5210	3.8080
13	1.2310	.4940	3.1290	1.2170	.4860	3.6590
14	1.2360	.4940	3.1290	1.2210	.4860	3.6590

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 • 300 HOUR TEST SERIES •

MODE 8

UNIT	NREC CO EI LB/KLB FU	NREC MC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
1	110.53	104.05	1.38	2.86	0.00
3	109.08	105.23	1.41	2.58	0.00
4	115.68	97.92	1.59	2.79	0.00
11	106.70	108.35	1.16	2.62	0.00
12	113.21	106.56	1.25	2.74	0.00
13	111.74	104.45	1.25	2.84	0.00
14	106.77	108.37	1.40	2.89	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 • 450 HOUR TEST SERIES •

UNIT	TSO HR	TSB HR	AMB TEMP DEG R	AMB PRESS IN HG	AMB HUMID LB H2O/AIR
3	3494.	476.	527.7	30.03	.010440
4	5573.	476.	527.7	30.03	.010440
7	4825.	420.	522.7	30.09	.009660
11	3434.	493.	525.7	30.00	.010260
12	1352.	493.	525.7	30.00	.010260
13	3332.	443.	528.7	29.95	.010900
14	1818.	443.	528.7	29.95	.010900
16	3889.	517.	529.7	29.95	.007500



RA211-22A • 450 HOUR TEST SERIES •

MODE 1

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
3	23.00	44.00	62.00	22.80	43.62	61.47
4	24.00	45.00	63.00	23.79	44.61	62.46
7	22.00	-42.00	61.00	21.92	-41.84	60.77
11	23.00	44.00	62.00	22.95	43.71	61.59
12	23.00	46.00	63.00	22.95	45.69	62.58
13	23.00	45.00	63.00	22.78	44.57	62.40
14	22.00	43.00	62.00	21.79	42.59	61.41
16	23.00	44.00	62.00	22.76	43.54	61.35

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22B • 450 HOUR TFST SERIES •

MODE 1

UNIT	FUEL FLOW LBM/HR	CB F/A X100	PERF F/A X100	TTT DEG R	EPR	THRUST LAF
3	1500.	.8500	.8170	1032.	1.012	2584.
4	1600.	-.9260	.8710	1068.	1.018	2782.
7	-1400.	.8630	-.7630	1032.	1.015	2439.
11	1600.	.8980	.8710	1068.	1.020	2610.
12	1600.	.8460	.8710	1059.	1.015	2808.
13	1500.	.8730	.8170	1068.	1.020	2777.
14	1500.	.8780	.8170	1032.	1.020	2580.
16	-1400.	.7930	-.7630	1068.	1.026	2568.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

R9211-22A • 450 HOUR TEST SERIES •

MODE 1

UNIT	CORR FU FL LRM/HR	COR CR F/A X100	COR PF F/A X100	COR TT7 DEG R	COR THRUST LRF
3	1519.	.8350	.8030	1014.	2594.
4	1620.	-.9100	.8570	1049.	2792.
7	-1413.	.8540	-.7570	1024.	2453.
11	1615.	.8860	.8600	1053.	2617.
12	1615.	.8350	.8600	1045.	2816.
13	1516.	.8570	.8020	1048.	2780.
14	1516.	.8610	.8020	1012.	2582.
16	-1416.	.7770	-.7470	1046.	2571.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 • 450 HOUR TEST SERIES •

MODE 1

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
3	1.520	875.8	-576.5	5.3	10.1
4	-1.729	836.0	436.4	7.9	12.7
7	1.525	-991.5	-602.8	6.2	9.2
11	1.655	864.6	476.8	6.3	9.9
12	1.538	855.7	503.2	6.9	9.0
13	1.594	898.6	484.6	7.0	11.3
14	1.592	867.3	531.9	6.3	10.4
16	1.448	770.5	449.0	4.8	9.2

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

R9211-228 • 450 HOUR TEST SERIES •

MODE 1

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
3	2702.	99.06	112.03	1.07	1.88	0.00
4	-2816.	86.63	77.69	1.35	2.16	0.00
7	-2668.	-110.41	-115.32	1.13	1.67	0.00
11	2780.	92.40	87.53	1.10	1.73	0.00
12	2743.	97.16	98.15	1.29	1.67	0.00
13	2754.	98.83	91.56	1.26	2.05	0.00
14	2737.	94.91	100.00	1.13	1.87	0.00
16	2757.	93.36	93.46	.96	1.84	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RB211-22B • 450 HOUR TEST SERIES •

MODE 1

UNIT	FCO X100	FMC X100	FNO X100	STD FCO X100	STD FMC X100	STD FNO X100
3	1.2600	.4930	3.1090	1.2090	.4710	3.5990
4	1.3640	.5460	3.2910	1.3060	.5210	3.8080
7	-1.1200	-.4010	-2.7670	-1.0960	-.3900	-3.2440
11	1.2740	.4920	3.0970	1.2320	.4750	3.6160
12	1.3990	.5990	3.4630	1.3530	.5780	4.0190
13	1.3420	.5430	3.2690	1.2820	.5190	3.7990
14	1.1990	.4430	2.9130	1.1470	.4230	3.3910
16	1.2400	.4910	3.3020	1.1820	.4670	3.5820

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22B • 450 HOUR TEST SERIES •

MODE 1

UNIT	NREC CO FI LB/KLB FU	NREC HC EI LA/KLA FU	NRE CNO EI LB/KLA FU	NR CNOX EI LA/KLA FU	SMK NUMBER CORRECTED
3	103.33	117.26	1.24	2.1A	0.00
4	90.4A	81.35	1.56	2.50	0.00
7	-112.80	-118.51	1.33	1.96	0.00
11	95.50	90.67	1.29	2.02	0.00
12	101.44	101.73	1.50	1.95	0.00
13	103.40	95.83	1.47	2.3A	0.00
14	99.22	104.57	1.31	2.1A	0.00
16	97.95	98.20	1.05	1.99	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

R5211-228 • 450 HOUR TEST SERIES •

MODE 2

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
3	27.00	49.00	66.00	26.77	48.58	65.43
4	27.00	50.00	66.00	26.77	49.57	65.43
7	27.00	50.00	66.00	26.90	49.81	65.75
11	-26.00	49.00	65.00	-25.83	48.67	64.57
12	-26.00	50.00	66.00	-25.83	49.67	65.56
13	27.00	50.00	67.00	26.74	49.52	66.36
14	27.00	50.00	65.00	26.74	49.52	64.38
16	27.00	49.00	65.00	26.72	48.49	64.32

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 • 450 HOUR TEST SERIES •

MODE 2

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LBF
3	1700.	.8580	.9260	1050.	1.021	7546.
4	1700.	.8290	.9260	1068.	1.024	7546.
7	1700.	.8520	.9260	1068.	1.030	7622.
11	1700.	.8950	.9260	1086.	1.028	7317.
12	1700.	.8520	.9260	1068.	1.028	7582.
13	1800.	.8690	.9800	1086.	1.025	7873.
14	1800.	-.9140	.9800	1068.	1.025	7274.
16	-1600.	-.7820	-.8710	1068.	1.032	7257.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 450 HOUR TFST SERIES •

MODE 2

UNIT	CORR FU FL LBM/HR	COR CB F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
3	1721.	.8440	.9100	-1032.	3559.
4	1721.	.8140	.9100	1049.	3559.
7	1716.	.8450	.9190	1060.	3642.
11	1716.	.8830	.9140	1071.	3326.
12	1716.	.8410	.9140	1053.	3592.
13	1819.	.8520	.9620	1065.	3877.
14	1819.	-.8970	.9620	1048.	3277.
16	-1618.	-.7660	-.8530	1046.	3261.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RR211-22B • 450 HOUR TEST SERIES •

MODE 2

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
3	1.594	739.7	-441.3	6.3	13.5
4	1.554	765.5	357.6	6.6	13.9
7	1.593	771.6	379.9	6.2	13.4
11	1.693	757.2	366.4	6.2	13.4
12	1.593	742.4	403.5	7.3	13.1
13	1.637	743.9	363.1	7.2	13.6
14	-1.721	737.6	406.0	6.7	13.7
16	-1.462	690.6	359.1	5.1	12.4

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22B • 450 HOUR TEST SERIES •

MODE 2

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
3	2802.	82.77	-84.83	1.17	2.49	0.00
4	2830.	88.71	71.20	1.26	2.66	0.00
7	2820.	86.96	73.55	1.16	2.48	0.00
11	2852.	81.20	67.50	1.09	2.37	0.00
12	2819.	83.63	78.10	1.36	2.42	0.00
13	2842.	82.20	68.93	1.31	2.48	0.00
14	2838.	77.41	73.19	1.15	2.36	0.00
16	2821.	83.60	75.78	1.04	2.50	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 450 HOUR TEST SERIES •

MODE 2

UNIT	FCO X100	FMC X100	FNO X100	STD FCO X100	STD FMC X100	STD FNO X100
3	1.6260	.7780	4.0190	1.5560	.7420	4.6400
4	1.6860	.8440	4.2130	1.6130	.8050	4.8620
7	1.6840	.8440	4.2010	1.6470	.8210	4.9160
11	1.6380	.7750	4.0010	1.5820	.7480	4.6610
12	1.6910	.8420	4.1940	1.6340	.8110	4.8830
13	1.7080	.8410	4.1860	1.6290	.8020	4.8510
14	1.7340	.8410	4.1860	1.6530	.8020	4.8510
16	1.5900	.7750	4.2750	1.5130	.7360	4.6200

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 • 450 HOUR TEST SERIES •

MODE 2

UNIT	NREC CO EI LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
3	86.49	-88.94	1.35	2.87	0.00
4	92.70	74.68	1.45	3.06	0.00
7	88.95	75.68	1.35	2.90	0.00
11	84.04	70.01	1.27	2.76	0.00
12	86.54	81.02	1.58	2.81	0.00
13	86.16	72.27	1.52	2.87	0.00
14	81.19	76.74	1.33	2.74	0.00
16	87.88	79.79	1.12	2.70	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 450 HOUR TEST SERIES •

MODE 3

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
3	94.00	97.00	93.00	93.19	96.17	92.20
4	93.00	97.00	92.00	92.20	96.17	91.21
7	93.00	97.00	92.00	92.64	96.63	91.65
11	94.00	99.00	92.00	93.37	98.34	91.39
12	94.00	98.00	93.00	93.37	97.35	92.38
13	94.00	98.00	93.00	93.11	97.07	92.12
14	94.00	98.00	92.00	93.11	97.07	91.13
16	94.00	98.00	93.00	93.02	96.98	92.03

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RA211-22A • 450 HOUR TEST SERIES •

MODE 3

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TTT DEG R	EPR	THRUST LRF
3	15000.	1.8850	2.0010	1734.	1.533	41846.
4	15000.	1.7910	2.0010	1734.	1.533	41846.
7	15900.	1.7820	2.1210	1734.	1.533	41763.
11	15500.	1.8500	2.0680	1752.	1.533	41888.
12	15500.	1.7970	2.0680	1734.	1.533	41888.
13	15000.	1.8460	2.0010	1734.	1.533	41958.
14	16000.	1.8840	2.1350	1770.	1.533	41958.
16	15500.	1.7930	2.0680	1761.	1.533	41958.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22A \* 450 HOUR TEST SERIES \*

MODE 3

UNIT	CORR FU FL LBM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
3	15145.	1.8520	1.9670	1704.	42000.
4	15145.	1.7600	1.9670	1704.	42000.
7	16052.	1.7680	2.1050	1720.	42000.
11	15646.	1.8250	2.0400	1728.	42000.
12	15646.	1.7730	2.0400	1711.	42000.
13	15159.	1.8110	1.9630	1701.	42000.
14	16170.	1.8480	2.0940	1736.	42000.
16	15679.	1.7550	2.0250	1724.	42000.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 • 450 HOUR TEST SERIES •

MODE 3

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
3	3.998	28.3	5.8	416.1	409.9
4	3.796	20.4	4.8	386.3	391.6
7	3.770	23.2	5.2	357.1	365.4
11	3.924	24.0	5.5	399.8	400.6
12	3.810	26.3	5.2	346.7	363.7
13	3.911	21.3	4.8	392.7	392.9
14	3.990	-41.8	6.2	383.6	385.9
16	3.794	24.9	8.3	451.2	442.5

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

R8211-228 \* 450 HOUR TEST SERIES \*

MODE 3

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO FI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBR FRONT SIDE
3	3161.	1.42	.51	34.40	34.40	29.80
4	3162.	1.08	.43	33.64	34.10	28.19
7	3155.	1.24	.48	31.24	31.97	26.00
11	3162.	1.23	.49	33.68	33.74	28.48
12	3162.	1.39	.47	30.08	31.55	22.89
13	3158.	1.10	.42	33.15	33.17	23.55
14	3156.	-2.10	.54	31.72	31.91	22.68
16	3156.	1.32	.75	-39.24	39.24	29.80

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B \* 450 HOUR TEST SERIES \*

MODE 3

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
3	109.2050	94.1680	81.6490	96.6720	87.8640	90.9420
4	97.3240	94.1680	81.6490	86.6540	87.8640	90.9420
7	96.6530	97.1790	82.4850	91.5470	93.5340	94.9890
11	112.8340	105.2940	87.8110	102.7130	99.7470	99.3780
12	105.7310	105.2940	87.8110	96.4910	99.7470	99.3780
13	114.7170	106.6700	88.9830	100.5370	99.2400	99.0220
14	120.3820	106.6700	88.9830	105.2170	99.2400	99.0220
16	107.4250	106.1050	95.0520	93.3070	98.0310	98.1710

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RA211-228 • 450 HOUR TEST SERIES •

MODE 3

UNIT	NREC CO FI LB/KLB FU	NREC HC EI LA/KLB FU	NRE CNO EI LA/KLB FU	NR CNOX EI LA/KLB FU	SMK NUMBER CORRECTED
3	1.61	.54	38.31	18.31	20.78
4	1.21	.47	37.46	17.98	21.99
7	1.31	.49	35.98	36.82	21.53
11	1.35	.51	38.11	38.18	22.59
12	1.52	.49	34.04	35.71	23.82
13	1.25	.45	36.89	36.91	27.16
14	-2.40	.58	35.29	35.51	24.44
16	1.52	.81	40.54	40.54	23.66

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

R8211-22B • 450 HOUR TFST SERIES •

MODE 4

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
3	88.00	94.00	91.00	87.25	93.19	90.22
4	88.00	95.00	90.00	87.25	94.19	89.23
7	88.00	94.00	90.00	87.66	93.64	89.65
11	88.00	96.00	90.00	87.41	-95.36	89.40
12	89.00	95.00	91.00	-88.41	94.37	90.39
13	87.00	96.00	-92.00	86.17	95.09	-91.13
14	88.00	96.00	90.00	87.16	95.09	89.14
16	88.00	95.00	90.00	87.08	94.01	89.06

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-22B • 450 HOUR TEST SERIES •

MODE 4

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LRF
3	13000.	1.6740	1.9060	1644.	1.446	3548
4	13000.	1.6150	1.9060	1644.	1.446	3548
7	13000.	1.5910	1.9060	1644.	1.446	3541
11	13000.	1.6540	1.9060	1662.	1.446	3551
12	-13500.	1.6290	-1.9790	1664.	1.446	3551
13	13000.	1.6270	1.9060	1644.	1.446	3557
14	-14000.	1.6900	-2.0530	1662.	1.446	3557
16	13000.	1.6130	1.9060	1680.	1.446	3557

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 450 HOUR TEST SERIES •

MODE 4

UNIT	CORR FU FL LBM/HR	COR CB F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
3	13161.	1.6450	1.8740	1616.	35613.
4	13161.	1.5880	1.8740	1616.	35613.
7	13124.	1.5690	1.8910	1631.	35613.
11	13122.	1.6320	1.8810	1640.	35613.
12	-13627.	1.6070	-1.9530	1641.	35613.
13	13138.	1.5960	1.8700	1613.	35613.
14	-14148.	1.6580	-2.0140	1630.	35613.
16	13150.	1.5790	1.8660	1645.	35613.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 • 450 HOUR TEST SERIES •

MODE 4

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
3	3.543	38.8	2.9	281.3	285.0
4	3.419	22.7	2.4	276.1	284.0
7	3.338	31.4	2.9	251.3	260.3
11	3.501	30.3	3.9	271.9	280.4
12	3.447	29.3	2.3	243.8	248.4
13	3.439	25.7	3.4	260.7	268.3
14	3.573	50.4	3.9	269.4	281.0
16	3.408	27.4	4.8	-321.2	-323.1

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RB211-228 • 450 HOUR TEST SERIES •

MODE 4

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
3	3161.	2.20	.29	26.23	26.58	18.67
4	3162.	1.34	.25	26.70	27.46	20.00
7	3154.	1.89	.30	24.82	25.72	21.85
11	3161.	1.74	.39	25.66	26.47	-26.67
12	3162.	1.71	.23	23.38	23.82	15.89
13	3157.	1.50	.35	25.02	25.74	19.74
14	3155.	2.84	.38	24.87	25.94	22.88
16	3157.	1.62	.48	-31.10	-31.28	19.87

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

R9211-22R • 450 HOUR TEST SERIES •

MODE 4

UNIT	FCO X100	FMC X100	FNO X100	STD FCO X100	STD FMC X100	STD FNO X100
3	63.3160	62.6060	61.1520	56.9820	58.5480	68.3670
4	65.5740	71.7290	67.2520	59.1100	67.0300	75.0960
7	57.7480	64.5780	61.8220	55.0540	62.2190	71.3110
11	-75.3000	-82.8340	74.0140	-69.2850	-78.5510	-83.9080
12	66.5100	72.3900	67.3060	61.3210	68.6890	76.3770
13	72.9130	-81.2380	73.2510	64.9920	-75.7090	81.7430
14	-78.1280	-81.2380	73.2510	-69.3860	-75.7090	81.7430
16	65.2130	70.6020	71.1550	57.6180	65.4120	73.8410

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B \* 450 HOUR TEST SERIES \*

MODE 4

UNIT	NREC CO EI LB/KLB FU	NREC MC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
3	2.45	.31	29.33	29.72	16.78
4	1.48	.26	29.81	30.66	17.89
7	1.98	.31	28.63	29.66	19.46
11	1.89	.41	29.10	30.01	14.47
12	1.85	.25	26.53	27.03	14.22
13	1.69	.37	27.92	28.73	17.75
14	3.19	.41	27.75	28.95	20.49
16	1.83	.52	-32.28	32.46	19.32

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22B • 450 HOUR TFST SERIES •

MODE 5

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
3	78.00	89.00	86.00	77.33	88.24	85.26
4	78.00	89.00	86.00	77.33	88.24	85.26
7	77.00	89.00	86.00	76.70	88.66	85.67
11	78.00	90.00	85.00	77.48	89.40	84.43
12	78.00	-91.00	86.00	77.48	-90.39	85.43
13	78.00	-91.00	-87.00	77.26	-90.14	-86.17
14	77.00	90.00	85.00	76.27	89.14	84.19
16	77.00	90.00	86.00	76.20	89.06	85.10

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-22R • 450 HOUR TEST SERIES •

MODE 5

UNIT	FUEL FLOW LBM/HR	CB F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LAF
3	9000.	1.3680	1.6670	1464.	1.302	24478.
4	9000.	1.3160	1.6670	1464.	1.302	24478.
7	9000.	1.3100	1.6670	1464.	1.302	24429.
11	9000.	1.3410	1.6670	1482.	1.302	24503.
12	9000.	1.3220	1.6670	1464.	1.302	24503.
13	9000.	1.3380	1.6670	1482.	1.302	24544.
14	9000.	1.4000	1.6670	1482.	1.302	24544.
16	9000.	1.3030	1.6670	-1500.	1.302	24544.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RA211-22R • 450 HOUR TEST SERIES •

MODE 5

UNIT	CORR FU FL LBM/HR	COR CB F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
3	9111.	1.3450	1.6390	1439.	24568.
4	9111.	1.2940	1.6390	1439.	24568.
7	9086.	1.3000	1.6540	1453.	24568.
11	9085.	1.3230	1.6450	1462.	24568.
12	9085.	1.3040	1.6450	1444.	24568.
13	9095.	1.3130	1.6350	1454.	24568.
14	9095.	1.3730	1.6350	1454.	24568.
16	9104.	1.2760	1.6320	1469.	24568.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 • 450 HOUR TEST SERIES •

MODE 5

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
3	2.881	83.9	5.2	132.0	140.9
4	2.774	56.6	3.0	125.2	133.8
7	2.754	66.2	4.1	125.7	133.7
11	2.825	61.0	4.5	123.1	132.1
12	2.781	84.3	4.8	116.9	129.5
13	2.816	59.0	4.8	121.5	133.1
14	2.942	104.9	6.5	126.7	141.5
16	2.740	59.3	6.3	-143.9	-154.6

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-228 • 450 HOUR TEST SERIES •

MODE 5

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
3	3154.	5.85	.63	15.11	16.12	10.00
4	3158.	4.10	.78	14.90	15.92	12.00
7	3149.	4.82	.52	15.02	15.99	14.47
11	3157.	4.34	.55	14.38	15.43	18.79
12	3154.	6.08	.60	13.86	15.35	15.33
13	3152.	4.20	.59	14.22	15.58	12.99
14	3147.	7.14	.76	14.17	15.82	15.23
16	3151.	4.34	.79	-17.70	-18.59	8.67

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

R8211-228 • 450 HOUR TEST SERIES •

MODE 5

UNIT	FCO X100	FMC X100	FNO X100	STD FCO X100	STD FMC X100	STD FNO X100
3	29.0580	30.7000	37.8610	26.6670	28.8150	42.5820
4	27.8340	30.7000	37.8610	25.5930	28.8150	42.5820
7	27.6570	31.3810	38.0310	26.5680	30.2850	43.9880
11	30.9950	35.3500	41.3140	28.9950	33.6410	47.1070
12	-33.7180	-41.1500	45.6990	-31.5320	-39.1370	-52.0560
13	-34.0200	-40.2380	45.1570	-30.9650	-37.6560	-50.7360
14	32.4050	34.5230	40.8030	29.4570	32.3340	45.9070
16	29.8090	34.2840	43.5310	26.9640	31.9100	45.5160

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22A • 450 HOUR TEST SERIES •

MODE 5

UNIT	NREC CO FI LB/KLR FU	NREC MC EI LB/KLR FU	NRE CNO EI LB/KLR FU	NR CNAX EI LB/KLR FU	SMK NUMFR CORRECTED
3	6.37	.67	16.99	18.14	10.00
4	4.46	.40	16.76	17.90	12.00
7	5.02	.54	17.38	18.49	13.24
11	4.63	.58	16.39	17.60	-17.89
12	4.51	.63	15.79	17.49	14.22
13	4.62	.63	15.98	17.51	12.99
14	7.85	.82	15.96	17.80	14.35
16	4.80	.84	18.09	-19.43	8.18

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RA211-228 • 450 HOUR TEST SERIES •

MODE 6

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
3	55.00	79.00	79.00	54.53	78.32	78.32
4	55.00	77.00	78.00	54.53	76.34	77.33
7	55.00	76.00	-77.00	54.79	75.71	76.70
11	55.00	78.00	78.00	54.63	77.48	77.48
12	54.00	78.00	78.00	53.64	77.48	77.48
13	55.00	-88.00	78.00	54.48	-87.16	77.26
14	-52.00	-82.00	78.00	-51.51	-81.22	77.26
16	54.00	77.00	78.00	53.44	76.20	77.19

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 • 450 HOUR TEST SERIES •

MODE 6

UNIT	FUEL FLOW LRM/HR	CR F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LRF
3	4400.	.9790	1.2710	1212.	1.128	10484.
4	4200.	.9400	1.2130	1230.	1.128	10484.
7	4200.	.9460	1.2130	1212.	1.128	10464.
11	4400.	.9730	1.2710	1249.	1.128	10495.
12	4100.	.9650	1.1840	1230.	1.128	10495.
13	4200.	.9630	1.2130	1230.	1.128	10512.
14	-4700.	-1.1440	-1.3570	-1302.	1.128	10512.
16	4000.	-.8970	1.1550	1248.	1.128	10512.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 450 HOUR TEST SERIES •

MODE 6

UNIT	CORR FU FL LBM/HR	COR CB F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
3	4454.	.9620	1.2490	1191.	10523.
4	4252.	.9240	1.1920	1209.	10523.
7	4240.	.9390	1.2030	1202.	10523.
11	4441.	.9600	1.2540	1231.	10523.
12	4139.	.9530	1.1680	1213.	10523.
13	4245.	.9450	1.1900	1206.	10523.
14	-4750.	-1.1220	-1.3310	-1277.	10523.
16	4046.	-.8780	1.1310	1222.	10523.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 • 450 HOUR TEST SERIES •

MODE 6

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
3	2.024	220.9	45.0	41.8	54.5
4	1.950	195.4	29.4	42.7	52.9
7	1.954	214.7	36.2	40.8	50.9
11	2.015	212.9	36.0	36.9	49.1
12	1.995	221.0	47.5	36.6	49.4
13	1.990	214.7	38.3	38.1	51.0
14	-2.362	289.8	54.8	42.5	57.0
16	-1.852	200.9	37.3	40.1	52.9

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 • 450 HOUR TEST SERIES •

MODE 6

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
3	3110.	21.60	7.57	6.72	8.75	7.84
4	3120.	19.90	5.14	7.15	8.86	6.62
7	3106.	22.13	6.30	6.78	8.47	7.24
11	3115.	20.96	6.08	5.97	7.94	-11.49
12	3108.	21.91	8.10	5.97	8.05	4.70
13	3109.	21.35	6.54	6.22	8.32	5.30
14	3101.	24.21	7.87	5.83	7.82	10.53
16	3108.	21.45	6.84	7.04	9.27	6.58

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RA211-228 • 450 HOUR TEST SERIES •

MODE 6

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
3	7.0410	9.4520	18.1750	6.6520	8.9190	20.6200
4	5.5350	6.4080	14.2390	5.2420	6.0570	14.2010
7	5.2160	5.8480	13.3750	5.0770	5.6620	15.5570
11	6.3330	7.9580	16.2200	6.0640	7.6130	18.6560
12	6.3130	7.9580	16.2200	6.0450	7.6130	18.6560
13	-12.7520	-26.9830	-34.7330	-11.9360	-25.3060	-39.1450
14	-9.5010	-13.8550	-22.8980	-8.8910	-13.0380	-25.9500
16	5.4130	6.3140	15.0670	5.0840	5.9320	15.9970

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

R8211-228 • 450 HOUR TEST SERIES •

MODE 6

UNIT	NREC CO EI LB/KLB FU	NREC MC EI LB/KLB FU	NRE CND EI LB/KLB FU	NR CNGX EI LB/KLB FU	SMK NUMBER CORRECTED
3	22.87	8.02	7.63	9.93	7.84
4	21.01	5.44	8.13	10.08	6.62
7	22.73	6.50	7.89	9.85	7.24
11	21.89	6.36	6.86	9.13	-11.49
12	22.88	8.46	6.86	9.26	4.70
13	22.80	6.97	7.02	9.39	4.80
14	25.87	8.36	6.61	8.87	10.53
16	22.84	7.28	7.47	9.85	6.58

NOTE~ MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 • 450 HOUR TEST SERIES •

MODE 7

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
3	27.00	49.00	67.00	26.77	48.58	66.43
4	27.00	49.00	66.00	26.77	48.58	65.43
7	27.00	49.00	66.00	26.90	48.81	65.75
11	27.00	50.00	-65.00	26.82	49.67	-64.57
12	-26.0	49.00	66.00	-25.83	48.67	65.56
13	27.00	-55.00	67.00	26.74	-54.48	66.36
14	27.00	50.00	66.00	26.74	49.52	65.37
16	27.00	49.00	66.00	26.72	48.49	65.31

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 450 HOUR TEST SERIES •

MODE 7

UNIT	FUEL FLOW LBM/HR	CB F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LBF
3	1800.	.8270	.9800	1068.	1.024	3892.
4	1600.	.7930	.8710	1068.	1.028	3546.
7	1700.	.8160	.9260	1068.	1.030	3622.
11	1800.	.8300	.9800	-1104.	1.030	3317.
12	1600.	.8130	.8710	1068.	1.028	3582.
13	1700.	.8330	.9260	1086.	1.028	3873.
14	1700.	-.8670	.9260	1086.	1.028	3539.
16	1600.	-.7310	.8710	1059.	1.032	3522.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B \* 450 HOUR TEST SERIES \*

MODE 7

UNIT	CORR FU FL LAM/HR	COR CH F/A X100	COR PF F/A X100	CORR Y17 DEG R	COR THRUST LBF
3	1822.	.8130	.9640	1049.	3906.
4	1620.	.7790	.8570	1049.	3559.
7	1716.	.8100	.9190	1060.	3642.
11	1817.	.8190	.9670	-1029.	3326.
12	1615.	.8020	.8600	1053.	3592.
13	1718.	.8170	.9080	1065.	3877.
14	1718.	-.8510	.9080	1065.	3542.
16	1618.	-.7160	.8530	1037.	3526.

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES



RB211-22B \* 450 HOUR TEST SERIES \*

MODE 7

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
3	1.532	777.9	417.1	6.8	14.8
4	1.481	783.3	344.8	-9.6	15.6
7	1.509	823.1	387.4	8.3	14.8
11	1.555	778.4	357.4	8.3	14.6
12	1.503	800.0	409.0	6.9	13.9
13	1.556	795.0	363.3	6.9	14.6
14	1.615	793.2	407.7	7.1	14.3
16	-1.356	732.3	338.1	7.0	14.2

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 \* 450 HOUR TEST SERIES \*

MODE 7

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
3	2795.	90.34	83.20	1.30	2.81	0.00
4	2819.	94.89	71.75	-1.92	3.11	0.00
7	2791.	96.89	78.33	1.61	2.87	0.00
11	2829.	90.09	71.05	1.57	2.77	0.00
12	2789.	94.49	82.99	1.33	2.70	0.00
13	2819.	91.67	71.97	1.31	2.77	0.00
14	2810.	87.82	77.55	1.30	2.60	0.00
16	2800.	96.23	76.34	1.52	3.06	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

R8211-22R \* 450 HOUR TEST SERIES \*

MODE 7

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
3	1.6100	.7780	4.0190	1.5410	.7420	4.6400
4	1.5930	.7780	4.0190	1.5250	.7420	4.6400
7	1.5910	.7780	4.0080	1.5560	.7560	4.6910
11	1.6790	.8420	4.1940	1.6220	.8110	4.8930
12	1.5950	.7750	4.0010	1.5430	.7480	4.6410
13	-2.0970	-1.2340	-5.2610	-1.9980	-1.1750	-4.0900
14	1.7070	.8410	4.1860	1.6280	.8020	4.8510
16	1.5650	.7750	4.2750	1.4900	.7360	4.6200

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22A • 450 HOUR TEST SERIES •

MODE 7

UNIT	NREC LB.	CO LB FU	FI	NREC LB/KLB	MC FU	EI	NRE LB/KLB	CNO FU	EI	NR LB/KLB	CNOX FU	EI	SMK CORRECTED	NUMBER
3		94.36			87.24			1.50			3.25		0.00	
4		99.07			75.23			-2.21			3.59		0.00	
7		99.08			80.59			1.88			3.36		0.00	
11		93.21			73.72			1.83			3.23		0.00	
12		97.73			86.08			1.55			3.14		0.00	
13		96.21			75.60			1.52			3.20		0.00	
14		92.05			81.32			1.50			3.01		0.00	
16		101.09			80.38			1.64			3.30		0.00	

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 • 450 HOUR TEST SERIES •

MODE 8

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
3	23.00	44.00	62.00	22.80	43.62	61.47
4	23.00	45.00	63.00	22.80	44.61	62.46
7	24.00	45.00	63.00	23.91	44.83	62.76
11	24.00	44.00	62.00	23.84	43.71	61.59
12	23.00	45.00	63.00	22.95	44.70	62.58
13	22.00	45.00	63.00	21.79	44.57	62.40
14	22.00	43.00	62.00	21.79	42.59	61.41
16	24.00	44.00	62.00	23.75	43.54	61.35

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RB211-22A • 450 HOUR TEST SERIES •

MODE A

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LBF
3	1500.	.8250	.8170	1032.	1.015	2584.
4	1400.	.7960	.7630	1032.	1.018	2782.
7	1600.	.8190	.8710	1050.	1.020	2836.
11	1600.	.8260	.8710	1068.	1.020	2610.
12	1500.	.8190	.8170	1050.	1.020	2808.
13	1500.	.8380	.8170	1068.	1.020	2777.
14	1500.	.8540	.8170	1032.	1.020	2580.
16	1400.	-.7220	.7630	1068.	1.026	2568.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

R8211-22R \* 450 HOUR TEST SERIES \*

MODE B

UNIT	CORR FU FL LBM/HR	COR CB F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
3	1519.	.8110	.8030	1014.	2594.
4	1417.	.7820	.7500	1014.	2792.
7	1615.	.8130	.8650	1042.	2852.
11	1615.	.8150	.8600	1053.	2617.
12	1514.	.8080	.8060	1036.	2816.
13	1516.	.8220	.8020	1048.	2780.
14	1516.	.8380	.8020	1012.	2582.
16	1416.	-.7070	.7470	1046.	2571.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22R \* 450 HOUR TEST SERIES \*

MODE 8

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
3	1.470	908.0	557.0	5.6	12.2
4	1.430	915.9	484.7	5.8	12.4
7	1.469	930.3	506.9	6.4	12.4
11	1.496	887.2	490.3	6.8	11.9
12	1.468	911.4	521.4	6.0	11.7
13	1.504	950.4	517.1	6.0	11.8
14	1.537	907.4	535.2	4.9	11.3
16	-1.291	845.8	446.8	5.1	11.5

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 • 450 HOUR TEST SERIES •

MODE 8

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NIMRER FRONT SIDE
3	2693.	105.83	111.53	1.04	2.33	0.00
4	2715.	110.65	100.61	1.16	2.45	0.00
7	2706.	109.10	102.14	1.24	2.40	0.00
11	2734.	103.17	97.96	1.30	2.28	0.00
12	2708.	107.00	105.16	1.15	2.25	0.00
13	2710.	108.97	101.86	1.14	2.22	0.00
14	2716.	102.07	103.43	.91	2.08	0.00
16	2703.	112.67	102.25	1.11	2.51	0.00

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 • 450 HOUR TEST SERIES •

MODE 8

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
3	1.2500	.4930	3.1080	1.1990	.4710	3.5990
4	1.3110	.5460	3.2910	1.2570	.5210	3.8080
7	1.3120	.5470	3.2900	1.2840	.5320	3.8540
11	1.2460	.4920	3.0970	1.2060	.4750	3.6160
12	1.3150	.5440	3.2790	1.2720	.5260	3.8260
13	1.3270	.5430	3.2680	1.2690	.5190	3.7990
14	1.1910	.4430	2.9130	1.1390	.4230	3.3910
16	1.2140	.4910	3.3020	1.1580	.4670	3.5820

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RB211-228 • 450 HOUR TEST SERIES •

MODE 8

UNIT	NREC CO EI LB/KLB FU	NREC MC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
3	110.35	116.74	1.25	2.69	0.00
4	115.39	105.35	1.34	2.84	0.00
7	111.50	105.02	1.45	2.81	0.00
11	106.58	101.47	1.52	2.66	0.00
12	110.55	108.96	1.34	2.62	0.00
13	113.96	106.61	1.32	2.59	0.00
14	106.67	108.15	1.06	2.42	0.00
16	118.10	107.43	1.21	2.72	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-228 \* 600 HOUR AND ABOVE TESTS \*

UNIT	TSO HR	TSR HR	AMB TEMP DEG F	AMB PRESS IN HG	AMB HUMID LB W20/AIR
1-5	2927.	633.	529.7	29.98	.010660
3-5	3668.	650.	525.7	29.87	.009680
4-5	5747.	650.	525.7	29.87	.009680
7-5	5053.	648.	520.7	29.90	.008990
10-5	4257.	544.	525.7	29.90	.011620
11-5	3600.	659.	519.7	29.97	.008040
12-5	1515.	656.	519.7	29.97	.008040
13-5	3467.	578.	518.7	29.95	.008270
14-5	1952.	577.	518.7	29.95	.008270
4-6	5885.	788.	525.7	29.98	.009640
10-6	4532.	919.	521.7	30.04	.006450

RB211-22B \* 600 HOUR AND ABOVE TESTS \*

MODE 1

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1-5	25.00	46.00	63.00	24.74	45.52	62.34
3-5	22.00	44.50	62.00	21.85	44.20	61.59
4-5	24.00	45.00	63.00	23.84	44.70	62.58
7-5	24.00	47.00	62.00	23.95	-46.91	61.88
10-5	22.00	45.00	62.00	21.85	44.70	61.59
11-5	24.00	45.00	62.00	23.98	44.96	61.94
12-5	24.00	45.00	62.00	23.98	44.96	61.94
13-5	23.00	45.00	63.00	23.00	45.00	63.00
14-5	23.00	44.00	61.00	23.00	44.00	61.00
4-6	24.00	45.50	64.00	23.84	45.20	63.57
10-6	23.00	44.00	62.00	22.93	43.87	61.82

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-228 \* 600 HOUR AND ABOVE TESTS \*

MODE 1

UNIT	FUEL FLOW LRM/HR	CR F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LBF
1-5	1675.	.8580	.9120	1086.	1.025	2763.
3-5	1500.	.8380	.8170	1032.	1.020	2622.
4-5	1500.	.8130	.8170	1032.	1.020	2821.
7-5	1500.	.8720	.8170	1086.	1.021	2678.
10-5	1500.	.8000	.8170	1068.	1.014	2619.
11-5	1500.	.7960	.8170	1068.	-1.009	2684.
12-5	1500.	.7840	.8170	1068.	1.020	2684.
13-5	1500.	.7880	.8170	1032.	1.020	2904.
14-5	1600.	.7920	.8710	1032.	1.020	2497.
4-6	1600.	.8350	.8710	1050.	1.010	2054.
10-6	1600.	.8180	.8710	1050.	1.018	2654.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 600 HOUR AND ABOVE TESTS •

MODE 1

UNIT	CORR FU FL LBM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
1-5	1696.	.8400	.8930	1063.	2768.
3-5	1508.	.8260	.8060	1018.	2617.
4-5	1508.	.8020	.8060	1018.	2816.
7-5	1502.	.8680	.8140	-1082.	2676.
10-5	1509.	.7900	.8060	1053.	2617.
11-5	1504.	.7940	.8150	-1066.	2688.
12-5	1504.	.7830	.8150	-1066.	2688.
13-5	1502.	.7880	.8170	1032.	2907.
14-5	1602.	.7920	.8710	1032.	2500.
4-6	1614.	.8240	.8600	1036.	3060.
10-6	1611.	.8140	.8660	1044.	2664.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RR211-228 \* 4.00 HOUR AND ABOVE TESTS \*

MODE 1

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1-5	1.573	831.3	465.4	5.2	12.7
3-5	1.493	903.6	563.3	4.4	8.4
4-5	1.480	879.8	443.8	5.3	10.5
7-5	1.561	-983.3	570.0	4.7	10.5
10-5	1.461	829.7	430.0	5.4	7.9
11-5	1.472	-746.8	385.7	5.0	11.2
12-5	1.420	791.1	462.1	6.1	10.1
13-5	1.432	828.3	446.7	4.7	9.6
14-5	1.428	816.2	426.7	4.6	9.9
4-6	1.534	845.9	438.3	-1.7	-6.2
10-6	1.486	818.2	481.5	3.7	8.5

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 600 HOUR AND ABOVE TESTS •

MODE 1

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1-5	2767.	93.03	89.47	.97	2.33	0.00
3-5	2691.	103.67	111.04	.83	1.50	0.00
4-5	2748.	103.94	90.06	1.04	2.05	0.00
7-5	2703.	108.37	108.09	.86	1.90	0.00
10-5	2756.	99.61	90.54	1.07	1.55	0.00
11-5	2793.	90.14	79.98	1.00	2.22	0.00
12-5	2734.	96.93	97.27	1.23	2.03	0.00
13-5	2745.	101.05	93.53	.95	1.92	0.00
14-5	2722.	99.03	101.46	.91	1.97	0.00
4-6	2770.	97.24	86.57	-.33	-1.18	0.00
10-6	2741.	96.04	97.09	.72	1.64	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

PR211-228 \* 600 HOUR AND ABOVE TESTS \*

MODE 1

UNIT	FCO X100	FMC X100	FNO X100	STD FCO X100	STD FMC X100	STD FNO X100
1-5	1.4130	.6000	3.4850	1.3440	.5690	4.0050
3-5	1.2820	.5140	3.2140	1.2450	.5000	3.7200
4-5	1.3080	.5400	3.3080	1.2700	.5260	3.8200
7-5	1.4420	.6490	3.6530	-1.4500	-.6440	-4.2850
10-5	1.3040	.5410	3.1900	1.2660	.5260	3.8260
11-5	1.2930	.5430	3.3540	1.2850	.5300	3.8820
12-5	1.2880	.5430	3.3540	1.2810	.5300	3.8820
13-5	1.2870	.5420	3.3270	1.2860	.5410	3.8010
14-5	1.2100	.4010	3.1460	1.2180	.4900	3.6770
4-6	1.3580	.5710	3.4120	1.3140	.5520	3.9310
10-6	1.2370	.4930	3.2910	1.2170	.4860	3.6510

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 • 600 HOUR AND ABOVE TESTS •

MODE 1

UNIT	NREC CO FI LB/KLB FU	NREC MC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
1-5	97.86	94.27	1.11	2.68	0.00
3-5	106.77	114.13	.96	1.83	0.00
4-5	107.03	92.59	1.20	2.37	0.00
7-5	109.30	108.93	1.01	2.23	0.00
10-5	102.64	93.25	1.28	1.86	0.00
11-5	90.64	80.57	1.15	2.57	0.00
12-5	97.46	97.99	1.43	2.36	0.00
13-5	101.11	93.79	1.11	2.24	0.00
14-5	99.00	101.64	1.07	2.30	0.00
4-6	100.45	89.60	-1.38	-1.36	0.00
10-6	97.50	99.08	.80	1.82	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-228 \* 600 HOUR AND ABOVE TESTS \*

MODE 2

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1-5	27.00	49.00	65.00	26.72	48.49	64.32
3-5	27.00	50.00	66.00	26.82	49.67	65.56
4-5	27.00	50.00	66.00	26.82	49.67	65.56
7-5	27.00	50.00	65.00	26.95	49.90	64.88
10-5	27.00	50.00	65.00	26.82	49.67	64.57
11-5	27.00	51.00	66.00	26.97	50.95	65.94
12-5	27.00	-52.00	65.00	26.97	-51.95	64.94
13-5	27.00	-52.00	67.00	27.00	-52.00	-67.00
14-5	27.00	51.00	65.00	27.00	51.00	65.00
4-6	27.00	50.00	66.00	26.82	49.67	65.56
10-6	27.00	49.00	65.00	26.92	48.86	64.81

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RA211-22R • 600 HOUR AND ABOVE TESTS •

MODE 2

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LBF
1-5	1750.	.8540	.9530	1077.	1.030	7254.
3-5	1800.	.8470	.9800	1050.	1.030	7598.
4-5	1700.	.8200	.9260	1068.	1.030	7598.
7-5	1800.	.8680	.9800	-1104.	1.025	7411.
10-5	1800.	.8150	.9800	1086.	1.022	7328.
11-5	1800.	-.7720	.9800	1072.	1.026	7687.
12-5	1800.	.8080	.9800	1068.	1.028	7420.
13-5	1800.	.7990	.9800	1054.	1.030	-4166.
14-5	1800.	.8310	.9800	1059.	1.030	7439.
4-6	1700.	.8380	.9260	1068.	1.020	7585.
10-6	1800.	.8240	.9800	1068.	1.024	7379.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 • 600 HOUR AND ABOVE TESTS •

MODE 2

UNIT	CORR FII FL LRM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LRF
1-5	1772.	.8360	.9330	1054.	3261.
3-5	1809.	.8350	.9670	1036.	3592.
4-5	1709.	.8090	.9140	1053.	3592.
7-5	1802.	.8650	.9770	-1099.	3409.
10-5	1811.	.8040	.9670	1071.	3326.
11-5	1805.	-.7700	.9790	1070.	3693.
12-5	1805.	.8070	.9790	1066.	3426.
13-5	1802.	.7990	.9800	1054.	-4170.
14-5	1802.	.8310	.9800	1059.	3442.
4-6	1715.	.8270	.9140	1053.	3592.
10-6	1812.	.8190	.9750	1062.	3392.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B • 600 HOUR AND ABOVE TESTS •

MODE 2

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1-5	1.588	776.6	405.1	4.8	13.6
3-5	1.568	740.1	-434.2	5.3	12.5
4-5	1.539	767.3	334.4	5.0	13.2
7-5	1.640	755.2	361.7	6.2	14.7
10-5	1.529	732.5	346.8	5.8	-10.7
11-5	-1.460	660.8	291.0	4.2	14.4
12-5	1.525	-644.1	332.4	6.6	14.6
13-5	1.507	686.6	326.6	5.1	13.6
14-5	1.558	691.6	373.0	4.6	13.3
4-6	1.588	701.6	323.9	-1.7	-8.1
10-6	1.536	735.1	381.6	4.9	11.0

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-228 • 600 HOUR AND ABOVE TESTS •

MODE 2

UNIT	CO2 FI LB/KLB FU	CO FI LB/KLB FU	HC FI LB/KLB FU	NO FI LB/KLB FU	NOX FI LB/KLB FU	SMK NUMBER FRONT SIDE
1-5	2806.	87.35	78.20	.89	2.51	0.00
3-5	2794.	83.95	84.60	.99	2.32	0.00
4-5	2832.	89.88	67.30	.97	2.53	0.00
7-5	2850.	83.53	68.72	1.12	2.66	0.00
10-5	2832.	86.34	70.22	1.12	-2.07	0.00
11-5	2854.	82.21	62.20	.96	2.95	0.00
12-5	2847.	76.53	67.85	1.29	2.86	0.00
13-5	2846.	82.51	67.42	1.01	2.69	0.00
14-5	2827.	79.86	73.99	.87	2.52	0.00
4-6	2859.	80.38	63.75	-.32	-1.52	0.00
10-6	2814.	85.69	76.42	.94	-2.10	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22R • 600 HOUR AND ABOVE TESTS •

MODE 2

UNIT	FCO X100	FHC X100	FND X100	STD FCO X100	STD FHC X100	STD FND X100
1-5	1.6280	.7770	4.0280	1.5460	.7360	4.6200
3-5	1.6820	.8350	4.2310	1.6310	.8110	4.8830
4-5	1.6680	.8350	4.2310	1.6170	.8110	4.8830
7-5	1.6780	.8330	4.2110	1.6640	.8270	4.9370
10-5	1.6660	.8360	4.0800	1.6150	.8110	4.8830
11-5	1.7020	.9060	4.4790	1.6920	.8990	5.1430
12-5	1.7980	.9790	4.6890	1.7880	-.9720	-5.4250
13-5	1.7890	.9770	4.6490	1.7880	-.9750	-5.4380
14-5	1.7300	.9040	4.4410	1.7290	.0020	5.1940
4-6	1.6820	.8400	4.2420	1.6260	.8110	4.8830
10-6	1.5900	.7750	4.2420	1.5640	.7590	4.7020

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RA211-228 \* 600 HOUR AND ABOVE TESTS \*

MODE 2

UNIT	NREC CO FI LA/KLA FU	NREC HC EI LA/KLA FU	NRE CNO FI LA/KLA FU	NR CNOX EI LA/KLA FU	SMK NUMBER CORRECTED
1-5	91.99	92.58	1.02	2.88	0.00
3-5	86.59	-97.08	1.14	2.68	0.00
4-5	92.68	69.28	1.12	2.92	0.00
7-5	84.26	69.27	1.31	3.12	0.00
10-5	89.10	72.42	1.34	2.48	0.00
11-5	82.68	62.68	1.00	3.42	0.00
12-5	-76.97	69.37	1.49	3.31	0.00
13-5	92.56	67.55	1.19	3.15	0.00
14-5	79.91	74.12	1.01	2.94	0.00
4-6	83.13	66.06	-0.37	-1.75	0.00
10-6	87.12	78.03	1.04	-2.33	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B \* 600 HOUR AND ABOVE TESTS \*

MODE 3

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1-5	94.00	97.00	92.00	93.02	95.99	91.04
3-5	94.00	98.00	93.00	93.37	97.35	92.38
4-5	94.00	98.00	92.50	93.37	97.35	91.88
7-5	-92.00	99.00	-95.00	91.82	-98.81	-94.82
10-5	-95.00	99.00	93.00	-94.37	98.34	92.38
11-5	93.00	97.00	92.00	92.91	96.91	91.91
12-5	93.00	98.00	92.00	92.91	97.91	91.91
13-5	-92.00	97.00	92.00	92.00	97.00	92.00
14-5	93.50	99.00	-91.00	93.50	-99.00	91.00
4-6	94.00	98.00	93.00	93.37	97.35	92.38
10-6	93.75	97.00	91.75	93.48	96.72	91.49

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-22R \* 600 HOUR AND ABOVE TESTS \*

MODE 3

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LBF
1-5	16000.	1.8940	2.1350	1770.	1.533	41916.
3-5	15500.	1.7750	2.0680	1725.	1.533	42070.
4-5	15250.	1.7780	2.0350	1725.	1.533	42070.
7-5	15000.	1.7620	2.0010	1716.	1.533	42028.
10-5	16000.	1.8100	2.1350	1770.	1.533	42028.
11-5	15500.	1.8360	2.0680	1752.	1.533	41930.
12-5	15000.	1.8340	2.0010	1716.	1.533	41930.
13-5	15000.	1.7810	2.0010	1707.	1.533	41958.
14-5	15000.	1.8390	2.0010	1725.	1.533	41958.
4-6	16000.	1.8640	2.1350	1752.	1.533	41916.
10-6	16000.	1.8460	2.1390	1734.	1.530	41513.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-223 • 600 HOUR AND ABOVE TESTS •

MODE 3

UNIT	CORR FU FL LRM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
1-5	16201.	1.8550	2.0900	1733.	42000.
3-5	15573.	1.7510	2.0400	1702.	42000.
4-5	15327.	1.7550	2.0080	1702.	42000.
7-5	15019.	1.7560	1.9940	1709.	42000.
10-5	16097.	1.7860	2.1060	1746.	42000.
11-5	15541.	1.8330	2.0640	-1748.	42000.
12-5	15040.	1.8300	1.9970	1712.	42000.
13-5	15015.	1.7810	2.0010	1707.	42000.
14-5	15015.	1.8390	2.0010	1725.	42000.
4-6	16140.	1.8420	2.1060	1728.	42000.
10-6	16111.	1.8360	2.1270	1724.	41779.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-228 • 600 HOUR AND ABOVE TESTS •

MODE 3

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1-5	4.012	24.5	6.4	433.7	423.1
3-5	3.753	29.9	8.8	424.3	409.0
4-5	3.761	20.4	-11.8	401.6	410.5
7-5	3.739	24.7	6.2	383.0	384.2
10-5	3.832	29.8	8.2	437.0	432.4
11-5	3.882	23.4	5.9	437.9	439.7
12-5	3.875	26.9	8.8	392.8	403.5
13-5	3.770	21.6	6.5	391.0	394.1
14-5	3.891	34.1	4.4	367.4	380.5
4-6	3.954	22.8	-9.4	386.1	382.0
10-6	3.909	26.2	5.5	384.6	399.7

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RB211-22B • 6 FOUR AND ABOVE TESTS •

MODE 3

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1-5	3155.	1.23	.55	35.65	35.65	29.05
3-5	3153.	1.60	-.91	37.28	37.29	30.67
4-5	3153.	1.09	-1.08	35.21	35.94	30.87
7-5	3166.	1.33	.57	33.90	34.01	27.52
10-5	3156.	1.56	.74	37.71	37.71	-14.67
11-5	3150.	1.21	.53	37.15	37.31	28.67
12-5	-3149.	1.39	.78	33.38	34.29	31.13
13-5	3157.	1.15	.60	34.23	34.50	33.11
14-5	3152.	1.76	.39	31.12	32.23	30.26
4-6	3156.	1.16	-.82	32.23	32.23	29.53
10-6	3155.	1.35	.48	32.45	32.97	-21.33

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-22R • 600 HOUR AND ABOVE TESTS •

MODE 3

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1-5	110.3140	92.9410	81.7730	95.1830	95.7010	89.3430
3-5	102.5840	104.4750	88.5950	94.0230	99.7470	99.3780
4-5	103.0400	104.4750	88.5950	94.4240	99.7470	99.3780
7-5	96.7580	101.0420	85.4400	94.5150	99.7470	99.3780
10-5	107.1300	104.6640	85.4350	97.9540	99.7470	99.3780
11-5	102.9200	98.0900	84.5210	101.5670	97.1100	97.5210
12-5	104.5650	100.7550	86.2350	103.2870	93.7470	99.3780
13-5	96.3240	98.5100	84.1100	94.3690	98.3320	98.3830
14-5	104.4070	99.9270	84.9700	104.4640	99.7470	99.3780
4-4	115.1140	105.1680	89.9280	104.7570	99.7470	99.3780
10-4	104.3510	97.4250	87.5030	100.1030	94.7110	95.9240

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-228 • 600 HOUR AND ABOVE TESTS •

MODE 3

UNIT	NREC CO FI LA/KLA FU	NREC HC EI LA/KLA FU	NRE CNO EI LA/KLA FU	NR CNOX EI LA/KLA FU	SMK NUMBER CORRECTED
1-5	1.42	.60	39.14	39.14	29.05
3-5	1.75	-.85	-41.81	41.81	25.86
4-5	1.19	-1.13	39.50	40.36	26.41
7-5	1.36	.58	39.43	39.56	25.68
10-5	1.71	.77	-43.86	-43.86	-14.67
11-5	1.23	.53	-42.81	-42.99	23.66
12-5	1.41	.79	38.46	39.51	23.66
13-5	1.15	.60	40.03	40.35	23.82
14-5	1.76	.39	36.40	37.70	25.86
4-6	1.27	-.87	36.06	36.06	22.59
10-6	1.40	.50	35.54	36.10	-18.89

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-228 • 600 HOUR AND ABOVE TESTS •

MODE 4

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1-5	88.00	95.00	90.00	87.09	94.01	89.06
3-5	88.50	95.00	91.00	87.91	94.37	90.39
4-5	89.00	95.00	90.00	-88.41	94.37	89.40
7-5	88.00	96.00	-94.00	87.83	-95.82	-93.82
10-5	-90.00	94.00	90.00	-89.40	93.37	89.40
11-5	87.00	-93.00	89.00	86.92	92.91	88.91
12-5	88.00	94.00	90.00	87.92	93.91	89.91
13-5	87.00	95.00	90.00	87.00	95.00	90.00
14-5	88.00	95.00	89.00	88.00	95.00	89.00
4-6	88.00	94.00	90.50	87.41	93.37	89.90
10-6	89.00	94.00	80.50	-88.74	93.73	89.24

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-228 \* 600 HOUR AND ABOVE TESTS \*

MODE 4

UNIT	FUEL FLOW LBM/HR	CB F/A X100	PERF F/A X100	TT7 DEG R	FPR	THRUST LBF
1-5	13000.	1.6930	1.9060	1666.	1.446	35542.
3-5	13000.	1.6540	1.9060	1644.	1.446	35673.
4-5	13000.	1.5690	1.9060	1635.	1.446	35673.
7-5	13000.	1.5810	1.9060	1653.	1.446	35637.
10-5	13000.	1.6510	1.9060	1644.	1.446	35637.
11-5	13000.	1.6470	1.9060	1644.	1.446	35554.
12-5	-12000.	1.6040	-1.7590	1644.	1.446	35554.
13-5	-12000.	1.5630	-1.7590	1608.	1.446	35578.
14-5	13000.	1.6370	1.9060	1617.	1.446	35578.
4-6	12900.	1.6430	1.8910	1644.	1.446	35542.
10-6	12500.	1.6470	1.8280	1644.	1.448	35607.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RA211-229 \* 600 HOUR AND ABOVE TESTS \*

MODE 4

UNIT	CORR FU FL LRM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LAF
1-5	13163.	1.6580	1.8660	1632.	35613.
3-5	13066.	1.6320	1.8810	1622.	35613.
4-5	13066.	1.5480	1.8810	1613.	35613.
7-5	13016.	1.5750	1.8990	1646.	35613.
10-5	13079.	1.6290	1.8810	1622.	35613.
11-5	13034.	1.6440	1.9020	1641.	35613.
12-5	-12032.	1.6010	-1.7560	1641.	35613.
13-5	-12012.	1.5630	-1.7590	1608.	35613.
14-5	13013.	1.6370	1.9060	1617.	35613.
4-6	13013.	1.6210	1.8660	1622.	35613.
10-6	12586.	1.6320	1.8180	1636.	35750.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-228 • 600 HOUR AND ABOVE TESTS •

MODE 4

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1-5	3.578	33.6	3.4	293.5	296.5
3-5	3.493	38.2	5.4	282.9	292.4
4-5	3.310	26.1	-8.1	271.9	286.7
7-5	3.349	30.6	4.4	257.7	268.2
10-5	3.487	47.9	5.5	268.4	271.9
11-5	3.476	29.7	3.1	294.2	306.1
12-5	3.383	38.6	2.8	258.5	278.5
13-5	3.301	28.1	3.1	248.6	262.7
14-5	3.454	48.9	2.8	241.5	266.1
4-6	3.473	23.1	-7.1	272.8	281.3
10-6	3.477	-52.5	2.8	250.3	266.9

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 \* 600 HOUR AND ABOVE TESTS \*

MODE 4

UNIT	CO2 FI LA/KLA FI	CO FI LB/KLA FI	HC FI LA/KLA FI	NO FI LA/KLA FI	NOX FI LA/KLA FI	SMK NUMBER FRONT SIDE
1-5	3154.	1.89	.33	27.05	27.32	-10.53
3-5	3153.	2.19	.53	26.70	27.60	18.67
4-5	3153.	1.58	-.84	27.07	28.55	17.22
7-5	3166.	1.84	.45	25.47	26.50	23.53
10-5	3155.	2.76	.55	25.39	25.72	-11.41
11-5	3150.	1.71	.30	27.87	29.00	25.33
12-5	3149.	2.29	.28	25.16	27.11	20.67
13-5	3157.	1.71	.33	24.96	26.27	17.65
14-5	3151.	2.84	.28	23.03	25.38	21.57
4-6	3156.	1.34	-.70	25.92	26.73	20.27
10-6	3153.	-3.03	.27	23.72	25.29	-12.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22R • 600 HOUR AND ABOVE TESTS •

MODE 4

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1-5	71.1370	70.7300	67.0490	62.4920	65.4120	73.8410
3-5	68.1190	71.8270	67.9070	62.9480	68.6890	76.3770
4-5	62.3020	71.8270	67.9070	57.7620	68.6890	76.3770
7-5	69.8150	-84.7640	75.4800	-68.3330	-83.6960	-87.8250
10-5	61.6390	62.8070	59.5550	56.9840	59.9899	69.5270
11-5	56.0090	56.8370	57.7050	55.3590	56.2880	66.5390
12-5	59.0330	65.1660	63.4490	58.3520	64.5320	73.1520
13-5	62.2490	74.9620	69.3190	62.2590	74.8270	81.0740
14-5	67.2220	74.9620	69.3190	-67.2390	74.8270	81.0740
4-6	61.2820	63.1090	61.9200	56.5570	59.9890	69.5270
10-6	61.7470	64.7360	65.5970	59.5330	62.9800	71.9190

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-228 • 600 HOUR AND ABOVE TESTS •

MODE 4

UNIT	NREC CO FI LB/KLR FU	NREC HC EI LB/KLR FU	NRE CNO FI LB/KLR FU	NP CNOX FI LB/KLR FU	SMK NUMBER CORRECTED
1-5	2.15	.35	29.79	30.09	-10.53
3-5	2.37	.56	30.03	31.04	16.78
4-5	1.71	-.88	30.45	32.11	15.73
7-5	1.88	.46	29.63	30.83	21.23
10-5	2.98	.57	29.64	30.03	-11.22
11-5	1.73	.31	32.14	-32.44	-24.60
12-5	2.31	.29	29.01	31.25	18.74
13-5	1.71	.33	29.08	30.73	15.86
14-5	2.84	.28	26.94	29.69	21.38
4-6	1.45	-.74	23.11	30.01	17.89
10-6	3.14	.28	25.01	27.73	11.91

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RB211-22B \* 600 HOUR AND ABOVE TESTS \*

MODE 5

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1-5	77.00	90.00	86.00	76.20	89.06	85.10
3-5	77.00	90.00	86.00	76.49	89.40	85.43
4-5	78.00	90.00	86.00	77.48	89.40	85.43
7-5	77.00	90.00	-89.00	76.85	89.83	-87.83
10-5	-79.00	90.00	86.00	-78.47	89.40	85.43
11-5	77.00	89.00	85.00	76.93	88.91	84.92
12-5	77.00	-91.00	85.00	76.93	-90.91	84.92
13-5	76.50	90.00	86.00	76.50	90.00	86.00
14-5	77.00	89.00	-84.50	77.00	89.00	84.50
4-6	78.00	90.00	86.00	77.48	89.40	85.43
10-6	-75.25	89.00	85.00	-75.03	88.74	84.76

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 \* 600 HOUR AND ABOVE TESTS \*

MODE 5

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LBF
1-5	9000.	1.3640	1.6700	1477.	1.301	24441.
3-5	9000.	1.3510	1.6670	1464.	1.302	24609.
4-5	9000.	-1.2520	1.6670	1464.	1.302	24609.
7-5	9000.	1.3110	1.6670	1464.	1.302	24585.
10-5	9000.	1.3400	1.6670	1482.	1.302	24585.
11-5	9000.	1.3380	1.6670	1473.	1.302	24527.
12-5	-8000.	1.3310	-1.4820	1464.	1.302	24527.
13-5	8500.	1.2760	1.5740	-1428.	1.302	24544.
14-5	9000.	1.3420	1.6670	1464.	1.302	24544.
6-6	9000.	1.3420	1.6670	1464.	1.302	24519.
10-6	8500.	1.3300	1.5680	1464.	-1.364	24627.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 \* 600 HOUR AND ABOVE TESTS \*

MODE 5

UNIT	CORR FU FL LBM/HR	COR CB F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
1-5	9113.	1.3360	1.6360	1447.	24490.
3-5	9045.	1.3330	1.6450	1444.	24568.
4-5	9045.	-1.2350	1.6450	1444.	24568.
7-5	9011.	1.3060	1.6610	1458.	24568.
10-5	9054.	1.3220	1.6450	1462.	24568.
11-5	9024.	1.3360	1.6440	1470.	24568.
12-5	-8021.	1.3290	-1.4790	1461.	24568.
13-5	8509.	1.2760	1.5740	1428.	24568.
14-5	9009.	1.3420	1.6670	1464.	24568.
4-6	9079.	1.3240	1.6450	1444.	24568.
10-6	8558.	1.3220	1.5580	1455.	-24726.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B \* 600 HOUR AND ABOVE TESTS \*

MODE 5

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1-5	2.968	73.3	5.7	132.5	138.5
3-5	2.838	83.5	-9.8	130.2	144.2
4-5	-2.631	57.2	4.2	123.7	138.5
7-5	2.764	69.0	4.5	119.3	133.6
10-5	2.914	100.3	7.9	122.2	130.1
11-5	2.811	60.4	3.5	131.9	145.1
12-5	2.792	86.4	5.3	122.0	139.9
13-5	2.691	70.9	4.7	112.3	127.7
14-5	2.816	104.8	6.2	117.4	135.6
4-6	2.823	56.0	7.4	120.2	132.8
10-6	2.749	-123.3	7.5	111.8	128.2

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

AD-A070 579

NORTHERN RESEARCH AND ENGINEERING CORP CAMBRIDGE MASS

F/G 13/2

TIME DEGRADATION FACTORS FOR TURBINE ENGINE EXHAUST EMISSIONS. --ETC(U)

MAY 78

DOT-FA74NA-1100

UNCLASSIFIED

NREC-1238-12

FAA-RD-78-56-7

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RB211-228 \* 600 HOUR AND ABOVE TESTS \*

MODE 5

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1-5	3144.	5.12	.68	15.21	15.90	14.57
3-5	3146.	5.89	-1.19	15.09	16.71	9.33
4-5	3150.	4.36	.55	15.49	-17.34	10.00
7-5	3160.	5.02	.56	14.27	15.97	15.33
10-5	3147.	7.14	.96	14.28	15.20	7.33
11-5	3146.	4.30	.43	15.43	16.98	20.00
12-5	3142.	6.19	.65	14.35	16.45	13.33
13-5	3150.	5.30	.60	13.79	15.49	9.33
14-5	3142.	7.44	.75	13.69	15.42	13.64
4-6	3152.	3.98	.90	14.03	15.50	11.33
10-6	3142.	-8.84	.93	-13.17	15.10	-4.61

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 • 600 HOUR AND ABOVE TESTS •

MODE 5

UNIT	FCO X100	FMC X100	FNO X100	STD FCO X100	STD FMC X100	STD FNO X100
1-5	31.3990	34.7460	41.0190	28.3030	31.9100	45.5160
3-5	31.1650	35.0750	41.6430	29.2410	33.6410	47.1070
4-5	28.7130	35.0750	41.6430	27.0160	33.6410	47.1070
7-5	30.3730	36.3550	42.2050	29.4470	35.9340	49.1490
10-5	30.4440	35.1390	40.1940	28.9660	33.6410	47.1070
11-5	28.1630	31.4980	38.9440	27.4900	31.2040	44.8410
12-5	-34.2240	-42.6790	-47.5300	-33.4810	-42.2740	-54.4210
13-5	29.6400	36.9590	42.7960	29.6350	-36.8920	-50.0530
14-5	28.2440	31.6640	38.6770	24.2840	31.6070	45.2750
4-6	31.0030	35.3080	41.7920	29.0150	33.6410	47.1070
10-6	28.0580	31.4010	40.3020	27.2270	30.5440	44.2770

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-228 \* 600 HOUR AND ABOVE TESTS \*

MODE 5

UNIT	NREC CO FI LA/KLA FI	NREC HC FI LA/KLA FI	NRE CNO FI LA/KLA FI	NR CNOX FI LA/KLA FI	SMK NUMBER CORRECTED
1-5	5.68	.73	16.87	17.64	14.57
3-5	6.28	-1.24	17.05	18.88	9.33
4-5	4.63	.57	17.50	-19.59	10.00
7-5	5.11	.57	16.63	18.61	15.10
10-5	7.61	-1.01	16.74	17.82	7.33
11-5	4.74	.43	17.80	-19.59	16.11
12-5	6.25	.66	16.55	18.98	11.91
13-5	5.70	.60	16.13	18.35	9.33
14-5	7.65	.76	16.01	18.50	13.64
4-6	4.27	.95	15.81	17.48	11.33
10-6	-9.11	.95	-14.46	16.59	-4.61

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 \* 600 HOUR AND ABOVE TESTS \*

MODE 6

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1-5	54.00	78.00	78.00	53.44	77.19	77.19
3-5	55.00	78.00	79.00	54.63	77.48	78.47
4-5	55.00	78.00	78.00	54.63	77.48	77.48
7-5	-77.00	-85.00	-75.00	-76.85	-84.84	-74.86
10-5	55.00	76.00	78.00	54.63	75.49	77.48
11-5	55.00	77.00	78.00	54.95	76.93	77.92
12-5	54.00	79.00	78.00	53.95	78.92	77.92
13-5	55.00	77.00	79.00	55.00	77.00	-79.00
14-5	53.00	80.00	77.50	53.00	80.00	77.50
4-6	56.00	79.00	78.50	55.53	78.47	77.98
10-6	54.00	77.00	77.50	53.96	76.75	77.28

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-228 • 600 HOUR AND ABOVE TESTS •

MODE 6

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TTT DEG R	EPR	THRUST LBF
1-5	4100.	.9570	1.1840	1239.	1.128	10502.
3-5	4300.	.9880	1.2420	1221.	1.128	10541.
4-5	4200.	.9310	1.2130	1212.	1.128	10541.
7-5	4200.	.9470	1.2130	1221.	1.128	10530.
10-5	4200.	.9440	1.2130	1248.	1.128	10530.
11-5	4200.	.9710	1.2130	1239.	1.128	10505.
12-5	4000.	.9600	1.1550	1230.	1.128	10505.
13-5	4200.	.9240	1.2130	1203.	1.128	10512.
14-5	-4400.	-1.1180	-1.3280	1257.	1.128	10512.
4-6	-442.	.9680	-1.2780	1229.	1.128	10502.
10-6	4200.	.9530	1.2130	1221.	1.128	10481.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RB211-22B • 600 HOUR AND ABOVE TESTS •

MODE 6

UNIT	CORR FU FL LBM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
1-5	4152.	.9380	1.1590	1213.	10523.
3-5	4322.	.9750	1.2250	1204.	10523.
4-5	4221.	.9190	1.1970	1196.	10523.
7-5	4205.	.9430	1.2080	1216.	10523.
10-5	4225.	.9320	1.1970	1231.	10523.
11-5	4211.	.9690	1.2100	-1236.	10523.
12-5	4011.	.9580	1.1530	1227.	10523.
13-5	4204.	.9240	1.2130	1203.	10523.
14-5	-4605.	-1.1180	-1.3280	-1257.	10523.
4-6	4464.	.9550	-1.2610	1212.	10523.
10-6	4220.	.9470	1.2060	1214.	10523.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-22R • 600 HOUR AND ABOVE TESTS •

MODE 6

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1-5	1.978	211.4	37.7	41.4	51.5
3-5	2.040	217.4	42.1	42.2	56.0
4-5	1.927	192.0	27.1	38.8	53.4
7-5	1.963	213.7	35.9	35.1	47.4
10-5	1.944	273.2	42.4	35.1	47.5
11-5	2.008	188.8	30.0	39.4	52.7
12-5	1.978	207.5	49.3	41.1	55.3
13-5	1.908	210.4	37.7	36.2	51.6
14-5	-2.296	-328.6	-69.6	38.3	57.3
4-6	2.007	174.8	32.8	38.0	-35.1
10-6	1.953	-302.5	-57.4	-28.6	46.1

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 • 600 HOUR AND ABOVE TESTS •

MODE 6

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1-5	3107.	21.14	6.47	6.90	8.45	8.05
3-5	3106.	21.06	7.01	6.72	8.91	5.92
4-5	3114.	19.74	4.78	6.55	9.01	4.00
7-5	3119.	21.60	6.23	5.82	7.87	7.33
10-5	3097.	-27.70	7.39	5.85	7.91	6.62
11-5	3110.	18.61	5.07	6.39	8.53	-11.33
12-5	3098.	20.68	8.26	6.73	9.05	5.96
13-5	3108.	21.81	6.71	6.16	8.79	5.30
14-5	-3034.	-28.09	-10.22	5.38	8.04	5.33
4-6	3118.	-17.28	5.57	6.17	-6.17	6.04
10-6	-3083.	-30.40	-9.91	-4.72	7.61	6.67

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22B • 600 HOUR AND ABOVE TESTS •

WONE 6

UNIT	FCO X100	FMC X100	FNO X100	STD FCO X100	STD FMC X100	STD FNO X100
1-5	6.2070	7.6720	15.9990	5.8110	7.1870	17.9970
3-5	6.3540	7.8960	16.3650	6.1030	7.6130	18.6560
4-5	6.1990	7.8960	16.3650	5.9580	7.6130	18.6560
7-5	-10.2860	-19.3420	-28.1490	-10.1630	-19.1300	-32.8430
10-5	5.2030	5.7560	12.9740	5.0020	5.5460	15.3640
11-5	5.7570	6.8840	15.0870	5.7170	6.8250	17.4290
12-5	7.0140	9.7900	18.7810	6.9650	9.7040	21.6880
13-5	5.6590	6.9390	15.0390	5.6560	6.9270	17.5890
14-5	-4.1520	11.2550	20.2730	-8.1480	11.2350	23.7100
4-6	7.0100	9.5160	18.3840	6.7120	9.1090	20.8810
10-6	5.6830	6.7850	15.5170	5.5690	6.6250	17.1120

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 • 600 HOUR AND ABOVE TESTS •

MODE 6

UNIT	NREC CO FI LB/KLB FU	NREC MC FI LB/KLB FU	NRE CNO FI LB/KLB FU	NR CNOX FI LB/KLB FU	SMK NUMBER CORRECTED
1-5	22.58	6.90	7.65	9.51	8.05
3-5	21.93	7.27	7.66	10.15	5.43
4-5	20.54	4.96	7.46	10.28	4.00
7-5	21.87	6.30	6.80	9.19	7.33
10-5	-28.81	7.67	6.93	9.37	6.62
11-5	18.73	5.12	7.38	9.86	-11.33
12-5	20.83	8.34	7.78	10.45	5.96
13-5	21.82	6.72	7.21	10.28	5.30
14-5	-28.10	-10.24	6.29	9.41	5.33
4-6	-18.05	5.82	7.01	-7.01	6.64
10-6	-31.02	-10.15	-5.20	8.40	6.16

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RR211-228 \* 600 HOUR AND ABOVE TESTS \*

MODE 7

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1-5	27.00	50.00	66.00	26.72	49.48	65.31
3-5	27.00	50.00	66.00	26.82	49.67	65.56
4-5	27.00	50.00	67.00	26.82	49.67	66.55
7-5	27.00	50.00	66.00	26.95	49.90	65.87
10-5	27.00	50.00	66.00	26.82	49.67	65.56
11-5	27.00	50.00	-65.00	26.97	49.95	64.94
12-5	27.00	51.00	67.00	26.97	50.95	-66.94
13-5	27.00	50.50	67.00	27.00	50.50	-67.00
14-5	27.00	50.00	-65.00	27.00	50.00	65.00
4-6	-26.00	49.00	66.00	-25.83	48.67	65.56
10-6	27.00	-52.00	66.00	26.92	-51.85	65.81

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-22B \* 600 HOUR AND ABOVE TESTS \*

MODE 7

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LBF
1-5	1700.	.8290	.9260	1068.	1.029	3518.
3-5	1700.	.8160	.9260	1063.	1.030	3598.
4-5	1700.	.7810	.9260	1077.	1.030	3971.
7-5	1700.	.8250	.9260	1077.	1.028	3678.
10-5	1800.	.7970	.9800	1095.	1.022	3594.
11-5	1600.	-.7370	.8710	1068.	1.026	3420.
12-5	1700.	.7780	.9260	-1104.	1.030	-4133.
13-5	1750.	-.7400	.9530	1059.	1.030	-4166.
14-5	1800.	.7730	.9800	1050.	1.030	3439.
4-6	1600.	.7960	.8710	1050.	-1.018	3585.
10-6	1800.	.7660	.9800	1063.	1.026	3645.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22B • 600 HOUR AND ABOVE TESTS •

MODE 7

UNIT	CORR FUEL LBS/HR	COR CR F/A X100	COR PF F/A X100	COR TIT DEG R	COR THRUST LBF
1-5	1721.	.8110	.9070	1046.	3526.
3-5	1709.	.8050	.9140	1049.	3592.
4-5	1709.	.7710	.9140	1062.	3964.
7-5	1702.	.8220	.9220	1073.	876.
10-5	1811.	.7470	.9670	1080.	3592.
11-5	1604.	-.7360	.8700	1066.	3426.
12-5	1704.	.7760	.9240	-1102.	-4140.
13-5	1752.	-.7400	.9530	1059.	-4170.
14-5	1802.	.7730	.9800	1050.	3442.
4-6	1614.	.7450	.8600	1036.	3592.
10-6	1812.	.7610	.9750	1057.	3659.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RP211-228 • 600 HOUR AND ABOVE TESTS •

MODE 7

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
2-5	1.543	795.1	375.2	7.3	14.8
3-5	1.507	785.0	407.8	6.6	15.1
4-5	1.460	783.7	319.9	6.1	15.0
7-5	1.556	780.4	331.4	7.0	15.1
10-5	1.448	796.4	339.5	7.8	14.8
11-5	-1.341	-692.4	300.7	6.9	14.5
12-5	1.463	-693.5	310.7	7.4	16.2
13-5	-1.373	751.6	334.2	5.8	14.4
14-5	1.440	712.0	352.8	-5.2	14.1
4-6	1.468	841.8	378.1	-3.2	-8.2
10-6	1.433	727.0	323.4	6.4	15.2

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

RR211-22R • 600 HOUR AND ABOVE TESTS •

MODE 7

INIT	CO2 ET LA/KLR FU	CO ET LA/KLR FU	HC ET LA/KLR FU	NO ET LA/KLR FU	NOX ET LA/KLR FU	SMK NUMBER FRONT STOP
1-5	2888.	92.13	74.81	1.38	2.91	0.00
3-5	2787.	92.51	82.45	1.27	2.91	0.00
4-5	2821.	96.38	67.58	1.24	3.03	0.00
7-5	2845.	90.81	66.24	1.33	2.89	0.00
10-5	2817.	95.95	70.26	1.54	2.93	0.00
11-5	2827.	90.19	67.29	1.48	3.11	0.00
12-5	2838.	85.62	65.80	1.50	3.28	0.00
13-5	2802.	97.64	74.58	1.23	3.07	0.00
14-5	2810.	88.43	75.27	1.06	2.87	0.00
4-6	2784.	-101.65	78.44	-0.64	-1.63	0.00
10-6	2824.	91.18	69.67	1.32	3.13	0.00

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES



RR211-228 • 600 HOUR AND ABOVE TESTS •

MODE 7

UNIT	FCO X100	FMC X100	FMO X100	STD FCO X100	STD FMC X100	STD FMO X100
1-5	1.6900	.8430	4.2230	1.6050	.7990	4.8400
3-5	1.6440	.8350	4.2310	1.6150	.8110	4.8430
4-5	1.6470	.8350	4.2310	1.5980	.8110	4.8430
7-5	1.6560	.8330	4.2110	1.6420	.8270	4.9170
10-5	1.6570	.8360	4.0800	1.6060	.8110	4.8430
11-5	1.6110	.8360	4.2770	1.6020	.8300	4.9480
12-5	1.7050	.9060	4.4790	1.6950	.8990	5.1430
13-5	1.6440	.8690	4.3400	1.6430	.8670	5.0760
14-5	1.6250	.8350	4.2410	1.6240	.8330	4.9400
4-6	1.5860	.7750	4.0470	1.5340	.7480	4.6410
10-6	1.7850	-.9450	-4.9750	-1.7550	-.9640	-5.4010

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-22A • 600 HOUR AND ABOVE TESTS •

MODE 7

UNIT	NREC CO FI LB/KLA FI	NREC MC FI LA/KLA FU	NRE CNO FI LA/KLA FI	NR CNOX FI LA/KLA FU	SK NUMBER CORRECTED
1-5	97.02	78.94	1.58	3.23	0.00
3-5	95.39	84.88	1.46	3.36	0.00
4-5	99.34	69.57	1.43	3.50	0.00
7-5	91.59	66.77	1.56	3.39	0.00
10-5	98.99	72.46	1.84	3.51	0.00
11-5	90.70	67.80	1.71	3.50	0.00
12-5	84.11	66.40	1.73	-3.80	0.00
13-5	97.70	74.72	1.44	3.60	0.00
14-5	88.49	75.41	1.24	3.35	0.00
4-6	-105.06	81.26	-0.74	-1.87	0.00
10-6	92.71	71.17	1.46	3.47	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-228 • 600 HOUR AND ABOVE TESTS •

MODE 8

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	N3 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT	CORR N3 PER CENT
1-5	25.00	46.00	63.00	24.74	45.52	62.34
3-5	22.00	43.00	62.00	21.85	42.71	61.59
4-5	24.00	45.00	63.00	23.84	44.70	62.58
7-5	22.00	43.00	62.00	21.96	42.92	61.88
10-5	22.00	44.00	61.00	21.85	43.71	-60.59
11-5	23.00	44.00	62.00	22.98	43.96	61.94
12-5	22.00	44.00	62.00	21.98	43.96	61.94
13-5	22.00	44.00	63.00	22.00	44.00	63.00
14-5	22.00	44.00	61.50	22.00	44.00	61.50
4-6	24.00	45.00	63.00	23.84	44.70	62.58
10-6	22.50	44.00	61.00	22.44	43.87	60.82

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

PR211-228 • 600 HOUR AND ABOVE TESTS •

MODE A

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT7 DEG R	EPR	THRUST LBF
1-5	1600.	.8290	.8710	1068.	1.025	2763.
3-5	1400.	.8120	.7630	1032.	1.020	2622.
4-5	1400.	.7840	.7630	1032.	1.020	2821.
7-5	1500.	.8260	.8170	-1086.	1.020	2678.
10-5	1500.	.7920	.8170	1068.	1.014	2420.
11-5	1500.	-.7310	.8170	1068.	1.018	2684.
12-5	1400.	.7660	.7630	1068.	1.020	2684.
13-5	1500.	-.7340	.8170	1032.	1.020	2904.
14-5	1500.	.7530	.8170	1032.	1.020	2597.
4-6	-1250.	.7920	-.6810	1032.	-1.010	2810.
10-6	1500.	-.7450	.8170	1050.	1.018	2455.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RR211-22B • 600 HOUR AND ABOVE TESTS •

MODE 8

UNIT	CORR FII FL LBM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT7 DEG R	COR THRUST LBF
1-5	1620.	.8120	.8530	1046.	2768.
3-5	1407.	.8010	.7520	1019.	2617.
4-5	1407.	.7740	.7520	1019.	2816.
7-5	1507.	.8230	.8140	-1082.	2676.
10-5	1509.	.7820	.8060	1053.	2419.
11-5	1504.	-.7300	.8150	-1066.	2688.
12-5	1404.	.7640	.7410	-1066.	2688.
13-5	1507.	-.7340	.8170	1032.	2907.
14-5	1507.	.7530	.8170	1032.	2600.
4-6	-1261.	.7820	-.6720	1019.	2816.
10-6	1510.	.7410	.8120	1044.	2465.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



RR211-228 • 600 HOUR AND ABOVE TESTS •

MODE A

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1-5	1.502	887.6	481.2	5.2	12.1
3-5	1.437	941.6	555.5	5.3	12.1
4-5	1.416	920.3	442.2	5.0	12.3
7-5	1.513	892.4	444.7	5.3	12.4
10-5	1.422	923.4	479.0	5.5	12.0
11-5	-1.324	-782.0	414.3	5.6	11.5
12-5	1.380	840.3	444.6	5.3	12.0
13-5	-1.308	873.2	466.8	4.4	11.7
14-5	1.349	850.4	464.4	4.2	11.7
4-6	1.425	926.3	468.9	-2.6	-7.2
10-6	-1.328	873.0	474.1	5.0	11.5

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 • 600 HOUR AND ABOVE TESTS •

MODE A

UNIT	CO2 FI LB/KLB FU	CO FI LB/KLB FU	HC FI LB/KLB FU	NO FI LB/KLB FU	NOX FI LB/KLB FU	SMK NUMBER FRONT SIDE
1-5	2734.	102.82	95.76	.98	2.31	0.00
3-5	2673.	111.47	112.98	1.04	2.35	0.00
4-5	2726.	112.75	93.06	1.02	2.48	0.00
7-5	2763.	103.74	88.80	1.02	2.17	0.00
10-5	2710.	112.03	99.84	1.10	2.40	0.00
11-5	2735.	102.84	93.59	1.20	2.49	0.00
12-5	2722.	106.59	96.30	1.09	2.48	0.00
13-5	2692.	114.44	105.10	.95	2.52	0.00
14-5	2706.	108.58	101.87	.89	2.46	0.00
4-6	2716.	112.35	97.70	-.51	-1.44	0.00
10-6	2693.	112.67	105.12	1.05	2.43	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

RA211-228 • 600 HOUR AND ABOVE TESTS •

MODE 8

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1-5	1.4010	.6000	3.4850	1.3320	.5690	4.0050
3-5	1.1680	.4400	2.9500	1.1350	.4290	3.4150
4-5	1.2970	.5400	3.3080	1.2600	.5260	3.8260
7-5	1.1650	.4410	2.9440	1.1560	.4380	3.4550
10-5	1.2310	.4890	3.0140	1.1950	.4750	3.6160
11-5	1.2000	.4510	3.1690	1.1940	.4880	3.6680
12-5	1.2120	.4910	3.1690	1.2060	.4880	3.6680
13-5	1.1990	.4910	3.1440	1.1980	.4900	3.6770
14-5	1.2050	.4910	3.1440	1.2040	.4900	3.6770
4-6	1.3040	.5440	3.3170	1.2630	.5260	3.8260
10-6	1.2110	.4930	3.2910	1.1920	.4840	3.6510

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

RB211-228 \* 600 HOUR AND ABOVE TESTS \*

MODE 8

UNIT	NREC CO EI LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
1-5	108.12	100.89	1.13	2.65	0.00
3-5	114.72	116.08	1.20	2.72	0.00
4-5	116.08	95.67	1.18	2.87	0.00
7-5	104.57	89.46	1.20	2.78	0.00
10-5	115.40	102.80	1.32	2.88	0.00
11-5	103.39	94.28	1.19	2.88	0.00
12-5	107.17	97.01	1.27	2.87	0.00
13-5	114.51	105.29	1.11	2.95	0.00
14-5	108.65	102.06	1.04	2.87	0.00
4-6	116.00	101.11	-0.59	-1.66	0.00
10-6	114.46	107.27	1.17	2.70	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

# 5. FUEL ANALYSIS DATA

Unit No.	Test Series	deg API	H/C Ratio	FIA, percent		
				Paraffin	Olefin	Aromatic
1	Baseline	41.1	1.90	79	2	19
	150-Hour	40.6	1.91	82	2	16
	300-Hour	41.1	1.89	79	2	19
	600-Hour	40.9	1.91	80	2	18
2	Baseline	41.1	1.90	79	2	19
3	Baseline	41.1	1.88	81	1	18
	150-Hour	40.6	1.91	82	3	15
	300-Hour	40.6	1.88	78	1	21
	450-Hour	40.6	1.88	82	1	17
	600-Hour	40.6	1.91	81	2	17
4	Baseline	41.1	1.88	81	1	18
	150-Hour	40.6	1.91	82	3	15
	300-Hour	40.6	1.88	78	1	21
	450-Hour	40.6	1.88	82	1	17
	600-Hour	40.6	1.91	81	2	17
	750-Hour	41.9	1.90	77	2	21
5	Baseline	40.9	1.86	79	1	20
6	Baseline	40.9	1.86	79	1	20
7	Baseline	41.1	1.87	79	1	20
	150-Hour	40.6	1.91	84	2	14
	450-Hour	40.6	1.91	85	1	14
	600-Hour	40.0	1.86	82	1	17
8	Baseline	41.1	1.87	79	1	20
	150-Hour	40.6	1.91	84	2	14
9	Baseline	40.9	1.88	78	2	20



Unit No.	Test Series	deg API	H/C Ratio	FIA, percent		
				Paraffin	Olefin	Aromatic
10	Baseline	40.9	1.88	78	2	20
	600-Hour	39.4	1.90	82	1	17
	750-Hour	41.9	1.91	81	2	17
11	Baseline	40.4	1.89	81	2	17
	300-Hour	40.6	1.91	84	1	15
	450-Hour	40.4	1.88	79	1	20
	600-Hour	43.4	1.93	80	2	18
12	Baseline	40.4	1.89	81	2	17
	300-Hour	40.6	1.91	84	1	15
	450-Hour	40.4	1.88	79	1	20
	600-Hour	43.4	1.93	80	2	18
13	Baseline *					
	150-Hour	41.3	1.93	83	1	16
	300-Hour	41.5	1.88	81	1	18
	450-Hour	40.4	1.90	80	1	19
14	Baseline *					
	150-Hour	41.3	1.93	83	1	16
	300-Hour	41.9	1.88	81	1	18
	450-Hour	40.4	1.90	80	1	19
15	Baseline	40.0	1.90	81	2	17
	150-Hour	40.4	1.89	79	2	19
16	Baseline	40.2	1.89	81	1	18
	150-Hour	40.6	1.88	79	1	20
	450-Hour	42.3	1.90	80	2	18
17	Baseline	40.2	1.89	81	1	18
	150-Hour	40.6	1.88	79	1	20
18	Baseline	40.6	1.91	80	1	19
19	Baseline	40.6	1.91	80	1	19

## 6. REFERENCES

1. Adams, H. T., Elements of Internal Combustion Turbine Theory, Cambridge University Press, 1949.
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3. "Control of Air Pollution from Aircraft and Aircraft Engines, Emissions Standards and Test Procedures for Aircraft", Federal Register, vol. 38, no. 136, Part II, July 17, 1973.